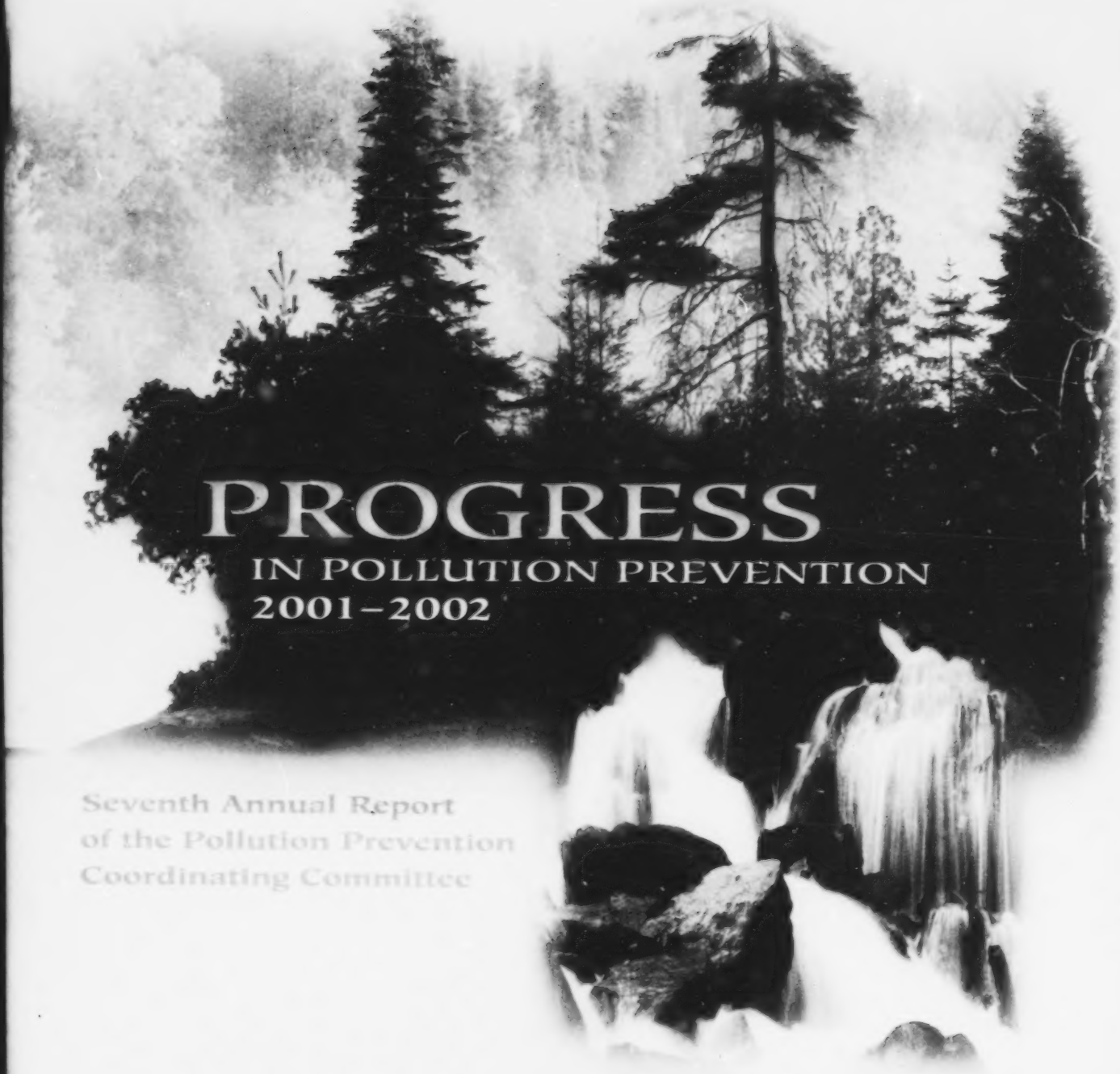

# PROGRESS
## IN POLLUTION PREVENTION
## 2001–2002

Seventh Annual Report
of the Pollution Prevention
Coordinating Committee

Government of Canada / Gouvernement du Canada

Canada

**Progress in Pollution Prevention 2001–2002: Annual Report of the Pollution Prevention Coordinating Committee**

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# PROGRESS

## IN POLLUTION PREVENTION

## 2001–2002

Canada

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# Message From the Minister of the Environment

**It is my pleasure to present the seventh annual report of the Government of Canada's Pollution Prevention Coordinating Committee (P2C2)—*Progress in Pollution Prevention 2001–2002*.**

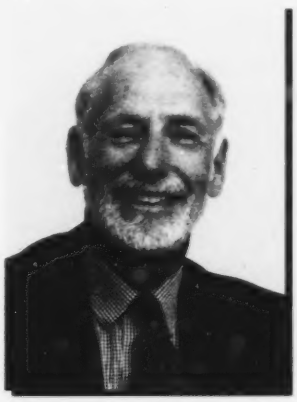
The goal of pollution prevention is to avoid the creation of pollutants rather than trying to manage them after they have been created. This fundamental shift in emphasis is not only a sound environmental strategy, it is good business.

In 1995, the Government of Canada adopted *"Pollution Prevention—A Federal Strategy for Action"*. The Strategy commits the federal government to demonstrating continuous improvement towards pollution prevention as a means of achieving sustainability. It also pointed to the need to make pollution prevention a part of our everyday choices and decisions, whether as governments, companies, communities, or individuals. Our first progress report included information submitted by six departments, and now 20 federal departments and agencies have taken on the challenge and are reporting on their successes and achievements.

In April 2002, I was privileged to attend the Canadian Pollution Prevention Roundtable in Quebec City, and to listen to a presentation by two young Canadians on the ecological footprints of our everyday personal choices. Their presentation addressed the same issues raised in the federal government's pollution prevention strategy and their message was striking because of its clarity and simplicity; every decision and choice we make as individuals, workers, and corporate or government leaders, has a potential impact on the world in which we live. Understanding our impacts on the environment and addressing them through the adoption of a preventive ethic are critical to achieving environmental sustainability.

*Progress in Pollution Prevention 2001–2002* is a reflection of the environmental choices and decisions made by federal government departments and agencies. It is also reflective of an increased awareness of their ecological footprint on the environment. The Government of Canada is commited to lead by example by incorporating pollution prevention practices within our own operations, fostering a national pollution prevention effort, striving to achieve a climate in which pollution prevention becomes an important consideration in the private sector, providing access to all Canadians to information on pollution prevention and participating in international pollution prevention initiatives.

For 2001–2002, federal government departments reported impressive reductions in greenhouse gas emissions through the implementation of activities, including alternative fuel policies for federal vehicle fleets, energy-saving initiatives for federal facilities, and the establishment of partnership programs with other levels of government and the private sector.



David Anderson

*Honourable David Anderson, P.C., M.P.*

*Minister of the Environment*

These partnership programs included EnviroClub™, the Canadian Industry Program for Energy Conservation, the Toronto Region Sustainability Program, and many more. Government departments also reported reductions in uses and releases of toxic substances, reductions in amounts of waste generated, and improvements in the implementation of green practices throughout their programs. In some instances, departments have moved to the next step by not only implementing pollution prevention in their own operations, but also examining and revising their policies and programs to encourage others, nationally and internationally, to implement pollution prevention in their practices and activities.

This 2001–2002 report sets out the Government of Canada's progress to date in achieving the goals it set in 1995. The report emphasizes the breath of our acquired knowledge about pollution prevention and its strong links to economic competitiveness, providing the basis for even greater pollution prevention successes in future. Further, it challenges all of us to do better. Together, we must strive to demonstrate continual improvement in the years to come. I welcome your views on this report and on our progress in meeting our pollution prevention commitments.

# Executive Summary

## Pollution prevention remains at the forefront in meeting the objectives of the federal government's priorities on clean air and water.

*Progress in Pollution Prevention 2001–2002* showcases the federal government's achievements in incorporating pollution prevention into its own activities and those of its partners. This is the seventh annual report prepared by the federal Pollution Prevention Coordinating Committee. The report focuses on the progress made in the year ending March 31, 2002, against the goals stated in the Federal Pollution Prevention Strategy and Action Plan and demonstrates the federal government's leadership and commitment to pollution prevention.

*Pollution Prevention—A Federal Strategy for Action* sets priorities for action based on five target sectors: federal departments and agencies, other orders of government, the private sector, individual Canadians, and the international community. By directing efforts towards preventing pollution instead of managing pollution after it has been created, the federal strategy works towards the ultimate goal of sustainable development.

### *Changes to the Format of the Report*

This year's report has been designed to more clearly show the linkages among pollution prevention, environmental management systems, and sustainability. *Progress in Pollution Prevention 2001–2002* also features a sample checklist within Section 2D on "Progress with the Canadian Public" (p.44) that provides guidance in identifying pollution prevention opportunities within the household. The last section of the report has been revamped and is now a reflection on Canadian pollution prevention trends and future opportunities. A reader survey was also developed and can be found in the middle of this report.

### *This Year's Accomplishments*

The purpose of pollution prevention is to focus on the long-term process improvements and best management practices that reduce or eliminate waste before it is generated. Based on this long-term reality, many federal departments have multi-year commitments to pollution prevention projects and programs. As a result, this report is dedicated to tracking the progress of new and ongoing pollution prevention projects and programs. The Government of Canada is advancing pollution prevention through improving and understanding the linkages among pollution prevention, environmental management systems, and sustainability; strengthening criteria for voluntary initiatives as a complement to regulation; expanding its network of partnerships with other orders of government; replicating successes and sharing lessons learned; and strengthening partnerships with other countries to advance pollution prevention. The federal government continues to work with the private sector on specific pollution prevention initiatives, to further demonstrate the economic value associated with waste minimization.

### *Progress within the Federal Government*

Managing the *Canadian Environmental Protection Act, 1999* requirements for toxic substances remained a key focus. The development of a Pollution Prevention Planning course and certificate was also supported.

Federal departments demonstrated leadership by integrating pollution prevention in the operations of their own facilities. Prevention-based measures were taken in the following areas: waste reduction and management, water/energy conservation, vehicle fleet management, procurement, land management, training and awareness, and behaviour change. The Sustainable Development in Government Operations Coordinating Committee continued its collaborative efforts to strengthen departmental sustainability programs through facilitating the exchange of resources on best practices.

### *Progress with Other Governments*

The development of regional or Canada-wide strategies for the management of pollutants and toxic substances continues to be relevant and a high priority through the Canadian Council of Ministers of the Environment. Municipal wastewater has been a particular focus for the federal, provincial, and territorial governments. Programs addressing greenhouse gases and smog were strong nationally and are reflected throughout this report. Advocating energy conservation was one of many strategies addressing these concerns. Activities with local

**THE PROGRESS IN POLLUTION PREVENTION REPORT GETS AROUND!**

Over 2500 copies of the *2000–2001 Progress in Pollution Prevention* report were distributed last year. The copies were circulated to over 25 industry and non-government stakeholders and reached the desks of all federal Cabinet Ministers and Deputy Ministers and all provincial and territorial Environment Ministers. The report is also made available in numerous university libraries and international institutions. Copies were made available at various environmental events and conferences, and 1800 people per month downloaded the report from the National Office of Pollution Prevention website.

On the Internet, view this report at http://www.ec.gc.ca/p2progress.

governments, such as the City of Toronto, Halifax Regional Municipality, and various communities in the Vancouver area, demonstrated the effectiveness of locally based action. Key partnerships were made with Aboriginal and northern communities to help Canadians reduce pollutants and address climate change.

***Progress with the Private Sector***

Several federal departments have been involved in the success of voluntary agreements and programs that focus on industries such as automotive manufacturing, chemical processing, oil and gas, furniture manufacturing, and metal finishing. Providing resources for the delivery of demonstration projects, guidance materials, and training programs further advances the adoption of the preventative approach in such sectors as agriculture, health care, information technology, construction, building design, mining, printing, and tourism.

There is an increased focus on the fastest growing, highly diversified facet of the economy, small to medium-sized enterprises (SMEs). A number of federal departments are providing SMEs with access to pollution prevention options, tools, and technologies needed to improve environmental performance.

***Progress with the Canadian Public***

The Canadian Pollution Prevention Information Clearinghouse, Canadian Pollution Prevention Success Stories, and Auto$mart continue to provide Canadians with access to high-quality and reliable information resources on pollution prevention. The EcoAction fund remains supportive of communities across Canada in addressing key environmental issues such as pesticide reduction, sustainable transportation, and home energy use.

As in past years, Canadian youth engaged in environmental discussions with decision-makers and pollution prevention practitioners at various roundtables and international forums and continued to provide valuable contributions to our knowledge and understanding of pollution prevention issues.

*Progress in Pollution Prevention 2001–2002* showcases the federal government's achievements in incorporating pollution prevention into its own activities and those of its partners.

***Progress with the International Community***

The North American Pollution Prevention Partnership will look for additional ways to align environmental policies, projects, and programs to advance pollution prevention and achieve better environmental results. The launch of the Pollution Prevention World Information Network opens the doors to collaborative information exchange on a global scale.

There were major successes in the negotiation of international agreements. Canada was the first country in the world to sign and ratify the Stockholm Convention on Persistent Organic Pollutants.

Efforts have been made to share Canadian pollution prevention approaches and practices with other countries around the world. China translated into Mandarin and distributed throughout the country several key Canadian documents on pollution prevention and pollution prevention planning.

***Trends and Future Opportunities***

Pollution prevention will continue to be at the forefront in helping to meet the objectives of the federal government's priorities on clean air and water. The federal Pollution Prevention Strategy resides as the foundation for promoting the use of processes, practices, materials, products, substances, and energy that avoid or minimize the creation of pollutants and waste.

*Progress in Pollution Prevention 2001–2002* demonstrates the collective commitment on the part of federal departments to implement pollution prevention techniques and processes within their own facilities. It also shows that pollution prevention techniques and processes are evolving to address local, national, and global challenges.

The pollution prevention successes and lessons learned in 2001–2002 leave the Government of Canada in a stronger position to identify future opportunities to promote pollution prevention as the preferred method for protecting the environment and improving economic competitiveness.

***We want to hear from you!***

*A reader survey can be found in the middle of this report.*

# The Pollution Prevention Framework

## The legislation and policies that form the federal government's commitment to protect human health and the environment establish a strong pollution prevention framework.

***Pollution Prevention and Its Linkages with Other Environmental Concepts***

The federal government defines pollution prevention as "the use of processes, practices, materials, products, substances or energy that avoid or minimize the creation of pollutants and waste, and reduce overall risk to human health or the environment." The goal of pollution prevention is to eliminate the causes of pollution rather than be required to manage the waste generated. Pollution prevention involves continuous improvement through design, technical, operational, and behavioural changes. It also encourages transformations that frequently lead to lower production costs, increased efficiencies, and more effective protection of the environment.

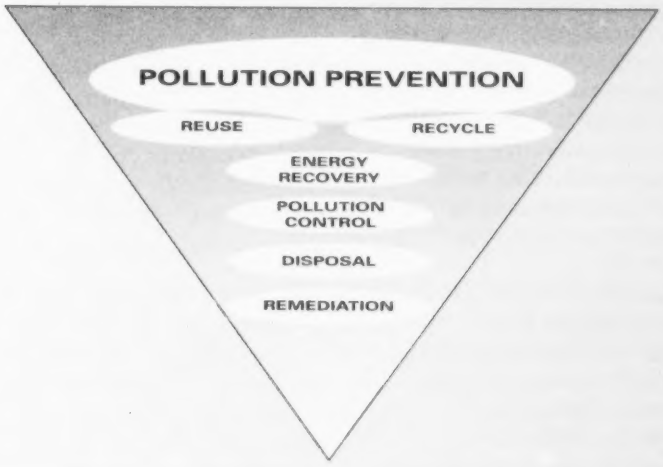
Pollution prevention practices and techniques focus on such areas as substances of concern, efficient use and conservation of natural resources, reuse and recycling on-site, materials and feedstock substitution, operating efficiencies, training, procurement techniques, product design, process changes, product reformulation, equipment modifications, and clean production.

Pollution prevention:

- minimizes or avoids the creation of pollutants;
- prevents the transfer of pollutants from one medium to another;
- accelerates the reduction and/or elimination of pollutants;
- minimizes health risks;
- promotes the development of source reduction technologies;
- uses energy, materials, and resources more efficiently;
- reduces the need for costly enforcement;
- limits future liability with greater certainty;
- recognizes that waste is a cost that can be reduced;
- avoids costly cleanup in the future; and
- promotes a more competitive economy.

**THE ENVIRONMENTAL PROTECTION HIERARCHY**

Moving up the hierarchy is a step in the direction of pollution prevention.



### THE CONNECTIONS AMONG SUSTAINABILITY, POLLUTION PREVENTION, AND ENVIRONMENTAL MANAGEMENT SYSTEMS

Pollution prevention (P2) is the preferred environmental approach for attaining sustainability. P2 stands at the top of the environmental protection hierarchy as the environmental management tool of first choice so that, whenever feasible, pollution or waste should be prevented or reduced at the source. Reducing material, energy, and water usage through improved efficiency is also considered P2. An environmental management system (EMS) is a systematic way of applying the P2 approach. An EMS can be designed to address only environmental compliance and not P2. However, many leading organizations are building P2 goals into their EMSs, so that continuous environmental improvement becomes an organizational priority. Some organizations are even trying to build sustainability into their EMSs. Sustainability paradigms such as Natural Step are used to evaluate impacts and action plans to determine if the organization is moving towards sustainability. Below is a table showing the inter-relationships among the concepts of sustainability, P2, and EMSs.

### *Federal Pollution Prevention Strategy*

*Pollution Prevention—A Federal Strategy for Action* is the Government of Canada's policy framework for advancing pollution prevention as the priority approach to environmental protection. Approved by Cabinet in June 1995, the strategy elaborates on government policy and sets priorities for action based on five goals involving partnerships with federal departments and agencies, other orders of government, the private sector, individual Canadians, and the international community.

### AT A GLANCE INTERRELATIONSHIPS

| Attribute | Sustainability | Pollution Prevention | Environmental Management Systems |
|---|---|---|---|
| Definition | Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.[1] | Pollution prevention is the use of processes, practices, materials, products, substances, or energy that avoid or minimize the creation of pollutants and waste and reduce overall risk to human health or the environment.[2] | An environmental management system is a framework developed by an organization to help improve its environmental performance by taking environmental considerations into account when making decisions and managing risks.[3] |
| Core mission/goals | To integrate the three pillars—environmental, economic, and social considerations—into decision-making. | To eliminate the causes of pollution rather than manage the waste generated. | To provide an organization with the assurance that its environmental performance not only meets, but will continue to meet, its legal and policy requirements. |
| Scale | Provides an all-encompassing vision that examines an organization's operations and their relationship to the community. | Involves improvement through design, technical, operational, and behavioural changes. | Integrates an organization's structure, planning activities, responsibilities, practices, procedures, and resources for the purpose of developing, implementing, achieving, reviewing, and maintaining the environmental policy. |
| Area of focus | Integrity of natural environment, enhancing human development, equity, democracy, and civility, precaution, and seeking mutually supportive benefits. | Human processes and practices, material and energy use, and behavioural changes. | Information management from various sources, such as legal requirements, training records, operational procedures, and performance data. |

1 World Commission on Environment and Development (Gro Harlem Brundtland, chair), "From One Earth to One World: An Overview," in: Our Common Future (Oxford/New York: Oxford University Press, 1987), p. 8.
2 *Canadian Environmental Protection Act, 1999.*
3 Greening Government Operations, Government of Canada.

The goals of the federal pollution prevention strategy include the following:

- *Within the federal government:* Institutionalize pollution prevention across all federal government activities;
- *With other governments:* Foster a national pollution prevention effort;
- *With the private sector:* Achieve a climate in which pollution prevention becomes a major consideration in industrial activities;
- *With the Canadian public:* Provide access to the information and tools necessary to implement pollution prevention practices;
- *With the international community:* Participate in international pollution prevention initiatives.

The strategy can be viewed at http://www.ec.gc.ca/pollution/strategy/.

### *Federal Pollution Prevention Coordinating Committee*

The federal Pollution Prevention Coordinating Committee was established in 1992 and is chaired by Environment Canada. It collectively promotes the implementation of *Pollution Prevention—A Federal Strategy for Action* by encouraging the practice of pollution prevention throughout the federal government and with the federal government's clients. The current committee membership, listed in Appendix I, includes representatives from 11 federal departments:

- Environment Canada
- Agriculture and Agri-Food Canada
- Canadian International Development Agency
- Fisheries and Oceans Canada
- Foreign Affairs and International Trade
- Health Canada
- Industry Canada
- National Defence
- Natural Resources Canada
- Public Works and Government Services Canada
- Transport Canada

*Progress in Pollution Prevention*, the annual report of the Pollution Prevention Coordinating Committee, was first published in 1996. This annual report informs Canadians and government officials of national progress in pollution prevention, highlighting pollution prevention achievements and successes across the country. By relating progress to the five target sectors of the federal pollution prevention strategy and action plan, this report provides a framework for monitoring performance, profiling federal environmental successes, and assessing progress made towards the goals of the federal strategy.

Including the members of the Pollution Prevention Coordinating Committee, 20 federal departments and agencies contributed to this seventh annual report (see Appendix II), emphasizing the continued integration of pollution prevention across the federal government and demonstrating federal interdepartmental collaboration.

### *The National Commitment to Pollution Prevention*

Within Canada, federal, provincial, territorial, municipal, and Aboriginal governments share jurisdiction for the environment. The Canadian Council of Ministers of the Environment (CCME) is Canada's premier forum for intergovernmental discussion and action on environmental issues. The CCME comprises environment ministers from the federal, provincial, and territorial governments with a mandate to improve environmental protection and promote sustainable development in Canada.

In 1993, the CCME contributed to the evolution of pollution prevention in Canada by releasing the statement entitled "National Commitment to Pollution Prevention." In May 1996, the CCME again addressed the issue by releasing "A Strategy to Fulfill the CCME Commitment to Pollution Prevention." This strategy sets out a shared vision, mission, and goal statement, as well as guiding principles for the implementation of pollution prevention by all provinces, territories, and the federal government. As part of the strategy, the CCME jurisdictions adopted a common definition of pollution prevention: "The use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and wastes, at the source." As stated in the CCME strategy, pollution prevention is a shared responsibility among governments.

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individuals, and industrial, commercial, institutional, and community sectors.

To show its support for pollution prevention, the CCME presents pollution prevention awards annually and maintains a Pollution Prevention Network. The Network serves as a forum for information exchange among its members on an ad hoc basis and provides technical support to the CCME Pollution Prevention Awards Program.

The Government of Canada, with stakeholders in the private sector, environmental non-government organizations, communities, labour, and academia, is putting pollution prevention into practice through a mix of regulatory, non-regulatory, and economic instruments. This includes modernizing legislation and regulations, managing national programs, developing guidelines and codes of practice for industrial operations, establishing Canada-wide standards for specific substances, supporting voluntary initiatives, ensuring accessibility of tools and information, and implementing international agreements.

**KEY POLLUTION PREVENTION POLICIES AND REGULATIONS**

| | |
|---|---|
| *Canadian Environmental Protection Act, 1999* | 2000 |
| Sustainable Development in Government Operations, A Coordinated Approach | 2000 |
| CCME Policy for the Management of Toxic Substances | 1998 |
| A Strategy to Fulfill the CCME Commitment to Pollution Prevention | 1996 |
| Pollution Prevention—A Federal Strategy for Action | 1995 |
| Greening of Government Operations Policy | 1995 |
| *The Auditor General Act* pertaining to sustainable development strategies | 1995 Amended |
| Toxic Substances Management Policy | 1995 |
| CCME National Commitment to Pollution Prevention | 1993 |

# Progress within the Federal Government

## Federal pollution prevention strategy goal: Institutionalize pollution prevention across all federal government activities.

### FEDERAL CLIMATE CHANGE COMMITMENT

Federal House in Order is an initiative led by Environment Canada and Natural Resources Canada to encourage the reduction of greenhouse gas (GHG) emissions within federal operations. In Spring 2001, the Federal House in Order target of reducing GHG emissions by 31% from 1990 levels by 2010 was agreed to by the 11 federal departments that account for 95% of emissions. The federal government has committed to reporting annually on its GHG reduction achievements to the Voluntary Challenge and Registry, and it received Gold Level reporting status in its 2001 update report entitled *Emissions Reductions from Federal Operations*. Specific actions taken under Federal House in Order to reduce GHG emissions include the announcement of an agreement to procure green electricity at Government of Canada facilities in Saskatchewan, the launch of an ethanol fuels strategy in the federal fleet, expansion of the Federal Buildings Initiative, and the launch of an initiative to reduce emissions associated with employee commuting and business travel. To find out more, visit the Government of Canada's Climate Change website at http://climatechange.gc.ca/english/index.shtml and the Federal House in Order website at http://www.fhio.gc.ca.

*National Programs*

**Legislation and Regulations**

The *Canadian Environmental Protection Act, 1999* (CEPA 1999) recognizes the importance of pollution prevention (P2) planning. Part 4 provisions allow the federal government to require the preparation and implementation of P2 plans for specific toxic substances. Environment Canada has initiated the process of requiring plans in respect of specific substances on the List of Toxic Substances. Stakeholder consultations are ongoing for dichloromethane, acrylonitrile, and the municipal wastewater sector. P2 planning is a systematic, comprehensive method of identifying options to minimize or avoid the creation of pollutants or waste. It is best applied to an entire process or facility. The more comprehensive the planning process, the more likely that it will focus on the root causes of problems, identify the most cost-effective P2 opportunities, and avoid inappropriate trade-offs (such as substituting one toxic substance for another). Plans should be tailored to the needs of the organization, forming an integral part of its existing business plan.

In addition to preventing pollution from ongoing or chronic situations (Part 4), CEPA 1999 also attempts to prevent pollution from spills or other sudden releases (Part 8). Part 8 provides authorities to require environmental emergency (E2) plans for substances once they have been declared toxic by the Ministers of Environment and Health (s. 199). In 2001–2002, 24 substances currently on the List of Toxic Substances (Schedule 1 of CEPA 1999) or substances that have been assessed as toxic and recommended for addition to the list were evaluated for possible E2 plan requirements using an E2 Planning Risk Evaluation Framework. An E2 plan outlines a facility's preparations and procedures to reduce the likelihood and consequences of environmental emergencies involving toxic substances. Good E2 planning involves emergency prevention, preparedness, response, and recovery measures. During the latter half of 2001–2002, Environment Canada's Environmental Emergencies Branch also began work on the development of a regulation under s. 200 of Part 8 that would require the development and implementation of E2 plans for those facilities that use or store any of 174 listed substances at or above specified thresholds. Substances have been included for their toxic or other hazardous properties. The E2 guidelines can be found at http://www.ec.gc.ca/CEPARegistry/plans/E2.cfm.

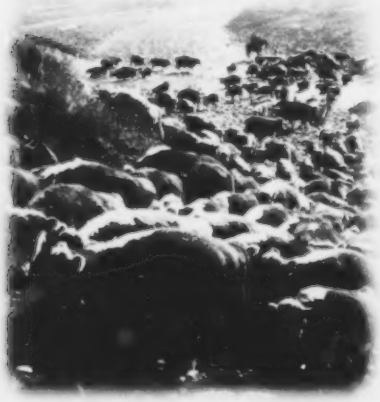
In Spring 2001, the Federal House in Order target of reducing greenhouse gas emissions by 31% from 1990 levels by 2010, was agreed to by the 11 federal departments that account for 95% of emissions.

**Toxic Substances**

To prevent the spread of foot and mouth disease to Canadian livestock, the Canadian Food Inspection Agency ensures that all passengers entering Canada from countries with the disease disinfect their shoes by walking across a disinfectant-soaked carpet. Staff at Mirabel, Dorval, and Quebec airports continue to use procedures that minimize the environmental impact of the used disinfectant. The traditional disinfectant, which was found to be a carcinogenic phenol compound, was replaced with a product that decomposes into sulfur and potassium, posing little or no threat to sewage systems or the environment. The procedure was carried out in all Canadian international airports during 2001–2002.

## Section 2A: Progress within the Federal Government (continued)

The Canadian Food Inspection Agency has replaced the traditional disinfectant used to prevent transmission of foot and mouth disease from overseas to Canadian livestock, with a product posing little or no threat to the environment.



Environment Canada supports research that will help prevent mercury releases from products into the environment. Efforts are under way to develop a permanent mercury disposal protocol with North American partners that will prevent mercury from being recycled and incorporated into other products. The department also supports the monitoring efforts of the Canadian Mercury Deposition Network and is active on a task force aimed at developing the North American Regional Action Plan on Mercury.

Under the *Canadian Environmental Protection Act, 1999*, the Ministers of Environment and Health have authority to declare substances "toxic" if they pose a significant risk to the health of Canadians or to the environment. The Toxic Substances Management Policy outlines the federal government's risk management process for toxic substances based on two key objectives: virtual elimination from the environment for toxic substances that are persistent, bioaccumulative, and primarily the result of human activity (Track 1); and life cycle management of other toxic substances and substances of concern to prevent or minimize their release into the environment (Track 2). Environment Canada applies a pollution prevention approach and the precautionary principle to the management of both Track 1 and Track 2 substances. It is implementing action plans to virtually eliminate the most dangerous toxic substances, and domestic action has already been taken to limit or ban the production, use, importation, or release of these substances.

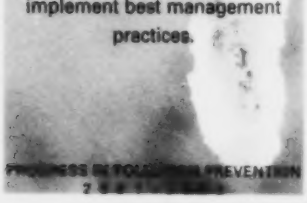
Forty-four substances on the first Priority Substances List (PSL1) were assessed under the Priority Substances Assessment Program by 1994. Of these, 25 were found to be toxic. Management options, developed in consultation with stakeholders through the Strategic Options Process, have been adopted for a number of toxic substances (see table below), and work is proceeding on those remaining.

| TARGETED SECTORS | STATUS IN 2001–2002 |
|---|---|
| **Dry cleaning** (tetrachloroethylene) | • Proposed regulations published in the *Canada Gazette* |
| **Solvent degreasing** (tetrachloroethylene; trichloroethylene) | • Draft regulations under development |
| **Coal-fired power generation** (inorganic arsenic compounds; inorganic cadmium compounds; oxidic, sulphidic, and soluble inorganic nickel compounds; sector also contributes to the release of dioxins and furans, particulate matter, benzene, and smog) | • Canada-wide Standard substances in the negotiation process |
| **Steel manufacturing** (benzene; inorganic arsenic compounds; inorganic cadmium compounds; inorganic fluorides; oxidic, sulphidic, and soluble inorganic nickel compounds; polycyclic aromatic hydrocarbons; dioxins and furans) | • Codes of Practice in place<br>• Canada-wide Standard for dioxins and furans in negotiation process |
| **Base metal smelting** (inorganic arsenic compounds; inorganic cadmium compounds; oxidic, sulphidic, and soluble inorganic nickel compounds) | • Codes of Practice and Environmental Management Plans under development |
| **Metal finishing sector** (hexavalent chromium compounds) | • Draft regulations under development |
| **Wood preservation** (hexavalent chromium compounds; hexachlorobenzene; creosote-contaminated sites; dioxins and furans; inorganic arsenic compounds; polycyclic aromatic hydrocarbons; creosote-impregnated wastes) | • Code of Practice being implemented |

| TARGETED SUBSTANCES | STATUS IN 2001–2002 |
|---|---|
| Benzidine<br>3,3'-Dichlorobenzidine | • Proposed regulations published in the *Canada Gazette*<br>• Agreement with one plant |
| Refractory ceramic fibres | • Environmental Performance Agreement in place |
| Dichloromethane | • CEPA 1999 section 56 pollution prevention planning notice under development |
| Hexachlorobenzene | • Proposed regulations published in the *Canada Gazette* |
| *Bis*(2-ethylhexyl) phthalate | • Additional studies are recommended |
| 1,2-Dichloroethane | • Environmental Performance Agreement in place |
| Short-chain chlorinated paraffins | • Risk assessment being reevaluated |

In November 2001 Environment Canada announced new requirements for the 2002 NPRI reporting year, including capturing more pollutant release data from municipal wastewater facilities.

The *Canadian Environmental Assessment Act* (CEAA) promotes pollution prevention practices by ensuring that environmental considerations are incorporated early in the decision-making process. The Atlantic Canada Opportunities Agency and the Canadian Food Inspection Agency have incorporated environmental assessment—a key to pollution prevention—into their policy frameworks and have adopted guidelines based on CEAA. Similarly, the Department of Foreign Affairs and International Trade released a framework for conducting environmental assessments of trade negotiations to assist decision-makers in identifying and including potential pollution prevention opportunities as a consideration throughout the trade negotiation process. For example, the Commission for Environmental Cooperation (CEC) was established under the North American Free Trade Agreement. The Pollutants and Health program of the CEC seeks to prevent or correct adverse effects of pollution on human and ecosystem health in North America by establishing cooperative initiatives and providing guidance on pollution prevention. The department also performs environmental site assessments of properties abroad to identify and implement best management practices.



A complete list of the 25 substances declared toxic under CEPA (commonly known as "CEPA-toxic") as a result of the PSL1 assessment, as well as the status of the development of control instruments for each, can be found at http://www.ec.gc.ca/sop.

A second Priority Substances List (PSL2) was published in 1995 with 25 additional substances. During 2000–2001, departments gathered information related to the PSL2 substances and initiated development of risk management strategies. Actions on PSL2 substances will be addressed in a multi-pollutant approach where possible, targeting groups of substances or taking a sector-specific approach. Specific risk management strategies will be released for consultation that will present the approach undertaken, the proposed objectives, and the proposed risk management tools. Consultations will also be held during the development of the subsequent risk management tools.

The New Substances Program, under Part 5 of CEPA, is an integral part of the federal government's approach to pollution prevention, as it ensures that no new substance is imported or manufactured in Canada prior to an assessment on whether it is toxic to the environment or human health. The risks of substances determined to be, or suspected of being, toxic or capable of becoming toxic may be managed, as necessary, through the imposition of conditions or the prohibition of their import or manufacture.

The CEPA New Substances Notifications Regulations for chemicals and polymers have been in place since 1994, while the biotechnology portion of the regulations came into force in 1997. Over 850 new substance notifications were received by Environment Canada and Health Canada in 2001–2002.

### Clean Air/Water

The National Pollutant Release Inventory (NPRI) tracks and provides Canadians with access to information on releases and transfers of key pollutants and related pollution prevention activities in their communities by industrial and commercial facilities. The NPRI is the only national, legislated, publicly accessible inventory of this type in Canada. Approximately 33% of all pollution prevention activity reported in 1999 was in the form of "good operating practices or training." "Spill and leak prevention" was the second most popular approach, at 18%. In November 2001, Environment Canada announced new requirements for the 2002 NPRI reporting year, including adding air pollutants that contribute to smog and other forms of poor air quality, capturing more pollutant release data from municipal wastewater facilities, and lowering the reporting thresholds for heavy metals. For more information, visit http://www.ec.gc.ca/pdb/npri.

**Departmental Policy Integration**

Now in its fourth year, the Environment Canada Pollution Prevention Team, composed of regional and headquarters staff, coordinates the adoption of pilot regional initiatives with other regional and national campaigns. The team continues to administer or deliver approximately 25 pollution prevention projects per year. Examples include Pollution Prevention in the Roadbuilding and Heavy Construction Industry, Greening Government Offices in Vancouver, and Bilge Water—Getting the Toxics Out.

The Canadian Economic Development Agency signed a cooperation agreement with Environment Canada—Quebec Region to provide the technical and scientific support for project implementation to develop technologies, products, and services relating to the environment, sustainable development, and pollution prevention. In 2001–2002, the Agency and its partners approved 50 projects representing an estimated investment of $38 million.

In January 2002, Western Economic Diversification Canada approved its departmental Environmental Policy. The policy commits the department to promoting pollution prevention practices and techniques, focusing on the efficient use and conservation of natural resources; operating efficiencies and training; procurement techniques; and process changes and clean production.

***Government Operations***

The Government of Canada is committed to making government greener by promoting the adoption of pollution prevention and environmentally responsible approaches and practices in each of its departments and agencies. This portion of the report outlines pollution prevention and other environmental initiatives undertaken by government departments in 2001–2002.

**Sustainable Development and Environmental Management Systems**

The 1995 amendments to the Auditor General Act require a number of federal departments and agencies to table sustainable development strategies in Parliament, outlining departmental goals for integrating sustainable development into their policies, programs, and operations, and to update these strategies every three years. The second round of sustainable development strategies was tabled in February 2001. In renewing their sustainable development strategies, departments took deliberate steps to strengthen management systems to ensure implementation. They also emphasized collaboration, with common goals shared across portfolios. Eight priority areas were identified for coordinated action and planning, including sustainable development in the North, sustainability in Canadian communities, promoting eco-efficient practices in the private sector, and sustainable development in government operations.

Looking forward, departments have begun a process to prepare a federal sustainable development strategy. This will be an overarching, longer-term policy framework that will promote a shared vision and further facilitate the coordination of efforts on sustainable development across the federal government. A federal sustainable development strategy will provide guidance to federal departments and agencies when preparing their next round of sustainable development strategies, due by the end of 2003.

**INTERDEPARTMENTAL ARRANGEMENTS ON POLLUTION PREVENTION AND ENVIRONMENTAL MANAGEMENT**

Federal departments and agencies often share interests, mandates, or responsibilities for government operations and sustainable development. Participation in interdepartmental groups is essential for developing common tools, coordinating activities, and sharing information.

Federal interdepartmental mechanisms in place to promote coordination on environmental management activities include:

- Deputy Ministers' Sustainable Development Coordinating Committee;
- Assistant Deputy Ministers' Sustainable Development Task Force;
- Interdepartmental Network on Sustainable Development Strategies;
- Federal Committee on Environmental Management Systems;
- Interdepartmental Advisory Group on Water Conservation at Federal Facilities;
- Sustainable Development in Government Operations Director Generals' Coordinating Committee;
- Pollution Prevention Coordinating Committee; and
- Regional federal councils.

**THE PRECAUTIONARY PRINCIPLE**

The Rio Declaration Precautionary Principle states that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." Adoption of the Rio definition of the precautionary principle into the *Canadian Environmental Protection Act, 1999* has triggered efforts to prepare a framework for its use in Canada. Federal departments and agencies have discussed what the principle means in the Canadian context.

An environmental management system (EMS) provides a systematic framework to help an organization manage its environmental obligations and document, evaluate, and communicate its environmental performance. Co-chaired by Natural Resources Canada and Environment Canada, the Federal Committee on Environmental Management Systems continues to promote the effective implementation of departmental EMSs. Some examples of effective implementation of EMSs appear below.

National Defence's 25 Canadian Forces Supply Depot (25 CFSD) in Montreal maintained its ISO 14001 EMS certification. The EMS at 25 CFSD has resulted in the continual improvement of procedures and controls to reduce the risk of spills and leaks, along with the examination of energy consumption, packaging, and wastewater management opportunities. During 2001–2002, 25 CFSD reused 3561 incoming pallets for outgoing shipments, saving over $45,000. Similarly, savings in the reuse of crates, fast packs, and other packing totalled over $37,000.

The Department of Foreign Affairs and International Trade implemented an EMS to review and improve its environmental performance in Canada and at Canadian missions[1] abroad. The Environmental Management Policy includes a commitment to incorporate pollution prevention principles and adopt best environmental management practices. Within the mission property management plans, the department now encourages missions to report on the environmental targets and performance measures for 11 priority areas. The mission property management team won the Deputy Minister's Award for Environmental Achievement and Sustainable Development and was cited for its efforts.

In 2001–2002, the Canadian Food Inspection Agency (CFIA) initiated and implemented EMSs across its regional facilities. Two workshops were held in Ontario during 2001–2002, and training was provided in pollution prevention and other environmental topics. Training was provided to all available staff in all Quebec area sites (28) on pollution prevention, due diligence, and other EMS topics. CFIA developed a National EMS Manual that will guide implementation of area/site-specific EMSs. Area green teams implemented EMSs through greening initiatives such as depots for hazardous waste collection and purchasing environmentally friendly cleaners. CFIA will continue to promote employee awareness of its commitment to environmentally responsible practices through events such as Clean Air Day and Environment Week.

Transport Canada developed an Environmental Monitoring Program as part of its EMS to ensure that all applicable regulations, policies, and practices are met; and pollution prevention is integral to its operations. Similarly, Human Resources Development Canada uses Environmental Action Plan Online as a tool for setting and reporting on its sustainable development strategy objectives and targets. As part of its efforts to increase staff awareness, training material is designed to ensure an understanding of the EMS and sustainable development strategy, increase integration of sustainable development into decisions, and instil a sense of environmental responsibility. Future plans involve the development of a new intranet site called Sustainable Development Online to provide an online environmental training program, knowledge bank, sustainable development links, and environmental laws database.

An integrated occupational health and safety and environmental management system framework was developed by Fisheries and Oceans Canada in 2001–2002. Full operation of the system is anticipated at the Institute of Ocean Sciences by the end of 2002–2003. Pollution prevention is an integral part of the system and will be adopted through training and procedures implementation.

1 The term Canadian mission refers to the offices of the department normally referred to by the city where they are located abroad. The department operates in over 120 cities abroad.

## SUSTAINABLE GOVERNMENT OPERATIONS

Sustainable Development in Government Operations (SDGO) is a government-wide initiative, set up in early 2000 to build capacity to meet the government's commitment for environmental excellence in its own operations. The SDGO initiative coordinates the efforts to green government operations and report collectively on progress.

The initiative involves the 25 departments and agencies that are required by legislation to prepare sustainable development strategies (SDSs) and three of the departments and agencies that voluntarily prepare SDSs. The SDGO initiative is co-led by three departments: Environment Canada, Natural Resources Canada (NRCan), and Public Works and Government Services Canada (PWGSC).

Environment Canada has launched and will continue to administer a web portal facilitating access to information, best practices, and tools related to greening government generally and to the SDGO initiative specifically. PWGSC is in charge of encouraging interdepartmental participation and building regional capacity for coordinated greening of federal operations. NRCan is responsible for producing the first government-wide report on greening operations. Departments are encouraged to follow best practice examples as outlined in the priority areas below. For more information and further best practice examples, visit http://www.greeninggovernment.gc.ca. Departments are also encouraged to have an organizational framework (i.e., environmental management system) that addresses these priorities and are encouraged to report progress on the greening of their operations.

| | |
|---|---|
| **Waste**<br>• Identify waste reduction opportunities, taking advantage of existing auditing tools and procedures.<br>• Develop and implement a waste reduction action plan, including an awareness program for employees.<br>• Separate waste streams at source to facilitate reuse, recycling, and proper disposal. | **Examples of P2 Practices and Techniques**<br>• Reducing inputs and waste<br>• On-site reuse and recycling<br>• Operating efficiencies and training |
| **Water Conservation and Wastewater Management**<br>• Identify water savings opportunities, taking advantage of existing audit tools and procedures.<br>• Develop and implement a water conservation plan.<br>• Specify water-saving equipment and devices for future purchases, such as water-efficient fixtures, including toilets, faucets, showerheads, and appliances. | **Examples of P2 Practices and Techniques**<br>• Ensure hazardous materials are not disposed of improperly<br>• Reduce the water volume to water treatment facilities |
| **Energy Efficiency / Building**<br>• Develop and implement energy management plans, including preventative maintenance (guidelines are available under the Natural Resources Canada Federal Building Initiative).<br>• Implement all economically attractive energy retrofits. | **Examples of P2 Practices and Techniques**<br>• Procurement of renewable energy or green power<br>• Energy-saving equipment and devices specified for future purchases, e.g., energy-efficient lighting and water heating |
| **Vehicle Fleet**<br>• Manage fleet vehicles in accordance with economic and environmental objectives of the Treasury Board Motor Vehicle Policy, being developed in partnership with Natural Resources Canada and Environment Canada.<br>• Wherever possible, use low-sulphur diesel and ethanol–gasoline blends, meeting environmental specifications.<br>• Purchase original equipment manufactured alternative fuel vehicles or retrofit vehicles where life cycle costs are comparable to gasoline- or diesel-fuelled vehicles. | **Examples of P2 Practices and Techniques**<br>• Purchase small, more energy efficient vehicles (i.e., hybrid vehicles)<br>• Number of vehicles for departmental use reduced |
| **Procurement**<br>• Evaluate potential purchases as outlined in Treasury Board's Material Management Environmental Guidelines.<br>• Consistent with Canada's international trade obligations, purchase products and services that meet environmental specifications wherever these are available and consider life cycle costs. In some cases, this could involve a small price differential.<br>• Provide green procurement training to officers with purchasing authority to improve decision-making, such as Implementing Environmental Purchasing Policies, available from Environment Canada. | **Examples of P2 Practices and Techniques**<br>Purchasing products with environmental labelling:<br>• EnergyStar (http://oee.nrcan.gc.ca/energystar/english/)<br>• EcoLogo (http://www.environmentalchoice.ca) |

**SUSTAINABLE GOVERNMENT OPERATIONS (continued)**

**Human Resources Management**

- Consistent with Treasury Board's personnel policy, adopt human resource management practices that foster innovative working arrangements, such as job sharing and working from home, which support environmental objectives.
- Infuse environmental awareness into all training programs, particularly orientation training.

**Examples of P2 Practices and Techniques**

Awareness Programs:

- Idle-free Zone (http://oee.nrcan.gc.ca/idling/)
- Zero Waste Program

Training available to public service employees:

- Energy efficiency workshops (delivered by Natural Resources Canada)
- Pollution Prevention Practitioners Course and Certificate (delivered by the Canadian Centre for Pollution Prevention)

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**Land Use**

- The identification, classification, and assessment of sites of concern on departmental lands should be undertaken using the Canadian Council of Ministers of the Environment (CCME) National Classification System or a similar tool.
- The management of the risk to human health and the environment should include risk assessment and techniques for containment, mitigation, and remediation.
- Site remediation objectives should be based on the existing CCME Environmental Quality Criteria as appropriate or the CCME Risk Assessment Framework for Ecological and Human Health Effects, for risk-based remediation plans.

**Examples of P2 Practices and Techniques**

- Planting hardy and native plants that need less pesticides and water
- Phasing out the use of hazardous substances

### Waste Reduction

All federal departments have set targets to reduce waste sent to landfill. Waste audits at Human Resources Development Canada indicate a 45% reduction in landfill waste compared with 1988 levels. At the Department of Justice's Headquarters, the waste diversion rate has been maintained at 80% for 2001–2002.

National Defence has reduced the amount of solid waste sent to landfill by 4% from 2000–2001 levels. Some of this reduction was through increased waste diversion. For instance, Canadian Forces Base Gagetown's in-vessel (enclosed) composter diverted 213 tonnes of food. The compost offsets the need to purchase fertilizer and pesticides.

In 2001–2002, many federal departments were faced with construction, renovation, or demolition projects. Several of Western Economic Diversification Canada's offices underwent renovations, and efforts were made to reuse demountable walls and windows as well as ceiling systems in the new construction. Through the joint efforts of the First Nations Band Councils and Health Canada staff in Quebec, "green" construction materials, such as floor glue and latex paint, were purchased.

Statistics Canada has dramatically reduced paper use. Publications available electronically have increased from slightly more than 1% in 1998 to 62% in 2001. In addition, several programs have converted to using strictly electronic dissemination for such things as job posters, newsletters, and the internal staff telephone directory. Public Works and Government Services Canada saves over 2 million tonnes of paper annually by making Government of Canada payments and receipts electronic. Similarly, Health Canada's internal InfoRoute newsletter is now distributed 90% electronically and 10% on recycled paper.

### Energy Efficiency/Water Conservation

The Federal Buildings Initiative (FBI), led by Natural Resources Canada, is a voluntary program that helps federal departments and agencies improve the energy and water efficiency of their facilities. To date, FBI-type contracts with private sector energy service companies have financed retrofits in more than 7000 federal buildings, resulting in annual energy savings of about $27 million and significant reductions in greenhouse gas emissions (15–20%).

## Section 2A: Progress within the Federal Government (continued)

As the primary custodian of Crown-owned property, Public Works and Government Services Canada has a significant role to play in greenhouse gas reduction and resource conservation. Energy and water conservation initiatives have already been implemented in more than 60% of its Crown-owned inventory by floor area, and more work is targeted. Update

Health Canada's First Nations and Inuit Health Branch is working to increase water conservation and efficient wastewater management. Hospital water audits were conducted for Sioux Lookout, Percy Moore, Moose Factory, and Norway House. Information from these audits will be used to develop water conservation strategies and "best practices" for wastewater management. New

Fisheries and Oceans Canada installed solar power systems at remote light stations to replace electricity supplied by on-site diesel generators and submarine power cables. Since the inception of the light station solarization program, the department has converted 23 remote light stations. The program has eliminated the potential for petroleum releases from fuel transfer or tank failure at these facilities, while ensuring a reliable energy supply for these navigational aids. New

As part of its Manitoba office renovations, Western Economic Diversification Canada installed a motion-sensitive lighting system. The department's Saskatchewan and British Columbia offices use only photocopiers and printers that operate with "power save" features. The department's Alberta office individually controls each section of the floor for low power lighting after hours. New

The Atlantic Canada Opportunities Agency has partnered with Natural Resources Canada on an energy efficiency and renewable energy initiative for Atlantic Canada. The goal is to increase Atlantic Canada's use of Natural Resource Canada's Industrial Energy Efficiency Audit Program and Renewable Energy Research and Development Program. New

Canada Post has implemented water conservation measures at its headquarters. Cooling towers were modified and can now be selectively filtered, with back-washing dramatically reduced, thereby saving considerable water. Aerators were installed on all washroom and kitchen taps, resulting in estimated water savings of 100 000 litres per month. Also, the landscape irrigation system is now operated as needed, rather than automatically. New

The Canadian Forces Base Comox's fuel reclaimer project has reduced hazardous waste generated at the base by 23%.

**Operations/Facility Management**

As an owner, operator, and landlord of airports, Transport Canada has a responsibility to ensure the proper management of glycol de-icing fluid. Samples of airport surface runoff collected during 2001–2002 were analyzed for glycol concentrations. The results showed a continuing improvement in the responsible management of glycol effluents from de-icing operations. Improvement is attributed in part to the detailed glycol management plans required from airline and/or ground handling agents at Transport Canada-operated airports and airport authorities before each de-icing season. Update

Environment Canada—Ontario Region completed three Federal Facility Pollution Prevention Demonstration Site Projects in partnership with Correctional Services Canada's Warkworth Institution in Campbellford, Ontario, the Canada Post Corporation Ottawa Mail Processing Plant and Vehicle Services Depot, and the House of Commons Printing Services. Each project involved implementation of pilot projects to demonstrate to management and staff how implementing pollution prevention practices could eliminate hazardous waste generation and improve energy efficiency and workplace health and safety. All three of these projects resulted in the successful implementation of numerous pollution prevention initiatives. Update

The Department of Foreign Affairs and International Trade has been involved in the design of a new Canadian Embassy in Berlin, Germany. Incorporated into the design were products that require less energy to extract, manufacture, ship, assemble, and install; and products that minimize the use of volatile organic compounds, chlorofluorocarbons, and polychlorinated biphenols. Update

Canadian Forces Base (CFB) Comox's fuel reclaimer project has reduced hazardous waste generated at the base by 23% by reusing waste aviation fuel. In 2001–2002, CFB Comox's project led to the receipt of three awards, two within the department and one from the Treasury Board of Canada. Update

Public Works and Government Services Canada developed a protocol to promote the use of alternatives to hazardous materials and processes that generate hazardous waste. The protocol document assists employees involved with hazardous materials to identify cost-effective opportunities to implement alternative

products and processes. The document also features an evaluation procedure for targeting hazardous materials for elimination or reduction. Included is a method for identifying materials of concern, a cost evaluation process, and key life cycle management issues that need to be addressed during an evaluation.

EnviroClub™ for federal facilities is a pilot project coordinated and delivered by Environment Canada—Quebec Region. The project, launched in May 2001, will end in September 2003. Its main objective is to help federal facilities involved in environmental or operations management carry out pollution prevention (P2) projects within their organization. The project has three components: P2-related training and awareness for participants; tours of targeted facilities to identify P2 opportunities; and implementation and follow-up of each partner's P2 projects. Federal partners include National Defence, Canada Economic Development, Parks Canada, Montreal Port Authority, Transport Canada, Public Works and Government Services Canada, Correctional Services Canada, and Indian and Northern Affairs Canada.

In 2001–2002, Fisheries and Oceans Canada undertook initiatives to avoid potential fuel spills. It initiated an inspection and upgrading program for its registered and non-registered fuel storage systems. As a result, 52 non-registered fuel systems were inspected and prioritized for future upgrading or removal.

National Defence reduced hazardous material usage, waste generation, and spills by supporting the implementation of best management practices (e.g., spill prevention) within its Land Management System workshops. A total of 23 best management practices initiatives were implemented across Canada in 2001–2002 through over 35 workshops. National Defence's Director Quality Assurance Marine "refit" staff monitored environmental protection and mitigation measures that shipyard contractors used, such as the use of spray controls to minimize the release of paint and paint solvents. Long-term targets for the contractors include reduction of spills, reduction in waste sent for disposal, and use of proper hazardous materials handling procedures.

In 2001–2002, Canadian Forces Base Gagetown converted its central heating plant from oil to natural gas. The "Heliport" and new dining facility have also been converted. Long-term targets include conversion of all locations on base to natural gas, where feasible. Conversion will reduce carbon dioxide emissions and significantly reduce emissions of sulphur dioxide, a major acid rain precursor.

**Land Use**

Health Canada's Scarborough, Ontario, laboratory has negotiated a new grounds-keeping contract incorporating requirements to reduce grass cutting frequency and to discourage grass cutting on smog alert days. The contract also references the use of only environmentally friendly "weed killing" and cleaning products. Other environmental initiatives include tree planting on the property to absorb carbon dioxide emissions.

In October 2001, a new working group was formed to develop a standard approach for pest management decisions in federal government operations. The mandate of the working group, co-chaired by Public Works and Government Services Canada and National Defence, was to ensure that current directives, policies, and initiatives of the federal government are consistent with integrated pest management principals and practices, beginning with lawn care. Integrated pest management is a decision-making process that uses all necessary techniques to suppress pests effectively, economically, and in an environmentally sound manner to sustain healthy landscapes and structures.

During 2001–2002, National Defence issued an Environmental Directive to eliminate pesticide use for cosmetic lawn care on all properties by April 1, 2003. The directive prohibits pesticide use for cosmetic lawn care within 50 metres of schools, day care centres, parks, playgrounds, churches, or hospitals. During 2001–2002, approximately 50% of all bases eliminated the use of pesticides for cosmetic lawn care.

**Vehicle Fleet Management**

The FleetWise program, managed by Natural Resources Canada, provides federal fleet managers with information and tools to improve the operational efficiency of their vehicle fleets, reduce emissions from federal operations, and promote the *Alternative Fuels Act* within the federal fleet. In 2001–2002, the

***ALTERNATIVE FUELS ACT* FOR FLEET ACQUISITION**

The *Alternative Fuels Act* will accelerate the use in Canada of alternative transportation fuels (ATFs) in motor vehicles and reduce the emissions of carbon dioxide and other greenhouse gases. The Act targets the federal vehicle fleet, thus providing the government with a leadership role in the use of ATFs.

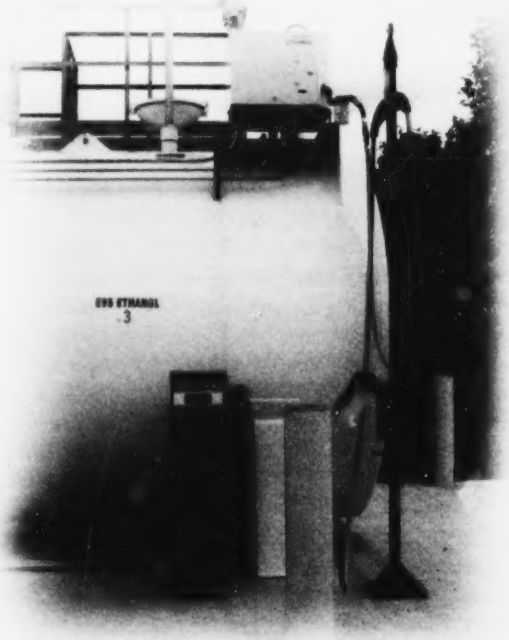
For instance, the Act requires departments and agencies to review each new vehicle acquisition in terms of its estimated annual fuel consumption and primary operational tasks and to purchase an ATF vehicle for a minimum of 75% of cases where it would be both cost-effective and operationally feasible.

program reduced greenhouse gas emissions by 185 kilotonnes of carbon dioxide. E-85 is an alternative fuel composed of 15% gasoline and 85% ethanol. It is currently in use in an increasing number of federal fleet vehicles that are being purchased from the manufacturers with a built-in capability of burning this higher ethanol fuel mixture. In 2001–2002, Natural Resources Canada alone distributed 50 000 litres of ethanol fuel to federal government departments and private industry, resulting in a 30% reduction of greenhouse gas production from vehicle tailpipe emissions. Furthermore, there is now a commercial ethanol fuel site operating in Ottawa, the first of its kind in Canada. Update

Federal departments also purchased other types of alternative fuel vehicles during 2001–2002. Atlantic Canada Opportunities Agency and Health Canada bought gas/electric hybrid vehicles. Of Natural Resources Canada's and Transport Canada's new vehicles, approximately 40% use alternative fuel, and the departments are on track to meet their long-term goal of 50% use. The Communication Research Centre Canada, an agency of Industry Canada, has low-pollution vehicles as 12% of its fleet. Update

The Canadian Food Inspection Agency promoted Green Fleet Driving Practices to its staff. Practices include servicing vehicles regularly to optimize performance, reducing the weight that vehicles carry to improve fuel economy, maintaining correct tire pressure, and reducing engine idling time. They will be included in the Vehicle Use Policy and will also be incorporated in each vehicle's fleet log book. The Agency will continue to promote the introduction of smaller vehicles and/or engine sizes and ethanol-blended fuels and monitor fleet utilization to maximize use. Update

As a commitment to upgrade its tanks under the Storage Tank Management Program, Agriculture and Agri-Food Canada, in partnership with Natural Resources Canada, developed a new above-ground storage tank and supply/distribution system suitable for oxygen-enriched fuels such as E-85. In addition, Agriculture and Agri-Food Canada has continued to help reduce emissions by introducing 12 new alternative fuel vehicles. New



Agriculture and Agri-Food Canada in partnership with Natural Resources Canada, have developed new above-ground storage tank and supply/distribution systems suitable for oxygen-enriched fuels such as E-85.

A body maintenance and corrosion control program was initiated by National Defence's Director General Land Equipment Program Management to lengthen the life span (50–70%) of its combat support vehicle fleets. The new maintenance program will reduce the quantity of hazardous materials used and hazardous, solid, and liquid wastes generated (e.g., cleaners, degreasers, and paint) during the life of a vehicle. Approximately 3000 vehicles were sprayed in 2001–2002, and fleet body condition monitoring will continue. New

E-85 is an alternative fuel composed of 15% gasoline and 85% ethanol which is capable of significantly reducing green house gases from vehicle tailpipe emissions.

National Defence has partnered with Natural Resources Canada and the Forest Industry Research Association of Canada to review current methods of vehicle fleet lubrication and oil and filter changes based on usage patterns. An alternative method is being used to examine the oil's level of acidity. As a result, the new method provides a more accurate assessment of the oil's life expectancy. For example, one vehicle exceeded the recommended oil change interval threefold by operating for 24 000 kilometres before its oil and filter were removed for analysis. Early results are promising and suggest that this alternative method does extend the period of time between oil and filter changes. The department has also developed *On-Track Pro*, a software package for determining the operational and economic feasibility of procuring new vehicles or converting vehicles to operate on an alternative fuel. New

The Canadian Food Inspection Agency participated in the Ontario Region Corporate Smog Action Plan initiated by Environment Canada, Health Canada, and Public Works and Government Services Canada. The plan encourages the adoption of practices to reduce smog precursor emissions from federal government operations. Many departments now use alternative fuel vehicles to address this issue. New

**Procurement**

Public Works and Government Services Canada (PWGSC) has developed a new intranet website—the Green Procurement Network—to help federal departments and agencies integrate green procurement into policies, programs, and purchasing processes. The site targets material managers, procurement officers, and other employees directly involved in the purchasing of goods and services. The e-purchasing site's catalogue has 1472 products that are considered green. PWGSC continues to incorporate environmentally responsible clauses, especially on energy, water, solid waste, and hazardous waste, into the National Master Specification. The department delivers a green procurement course that has been taken by 307 PWGSC purchasers and 21 employees of other departments to date. PWGSC is also the lead department for "Green Power" procurement on behalf of the federal government and has signed Memoranda of Understanding with suppliers from Atlantic Canada that have this capability. The department is currently negotiating formal "Green Power" purchase agreements with Nova Scotia Power, Newfoundland and Labrador Hydro, New Brunswick Power, and B.C. Hydro. Requests for Proposal are in the final stages of development for the Ontario and Alberta markets. Update

The Canadian Food Inspection Agency integrated green criteria into its laundry and uniform rental service contracts. In Alberta, it agreed to purchase 35% wind-powered electricity at its two major laboratories, thus reducing carbon dioxide emissions in 2001–2002 by 288 tonnes. The Agency provided green procurement training and has an online system highlighting products with "green" qualities that are selected for their recycled material content, fewer polluting by-products, and ease of reuse and recycling. Update

In 2001–2002, Human Resources Development Canada spent approximately the same amount on green purchases as the previous year, despite a 13% reduction in the procurement budget. Update

Health Canada's Information, Analysis and Connectivity Branch has been proactive in purchasing recycled paper. This past fiscal year, recycled paper increased from 39% to 98% of total paper purchased. Also, the branch increased its purchasing of recycled printer cartridges in 2001–2002, from 13% to 26% of total cartridges purchased. The regional offices of Western Economic Diversification Canada have taken similar procurement action. New

In 2001–2002, National Defence's Area Support Unit Chilliwack procured a hot water parts washer for use in maintenance activities. Overall, the new parts washer reduced varsol purchase and disposal by approximately 450 litres. New

The Department of Foreign Affairs and International Trade spent $1.2 million in 2001–2002 on green products in support of its headquarters' operations. New

**Training and Awareness**

Environment Canada's Federal Programs Division recently released the Federal Facilities Mercury Info-guide, a fact sheet that provides information on the health and environmental issues surrounding the use of mercury-containing products, as well as their use/location, alternatives, and disposal methods. Over 1000 copies of the guide have been distributed in Ontario. A website has also been created to share mercury-related information as well as mercury fish consumption advisories. For more information, visit http://www.ec.gc.ca/mercury and http://www.on.ec.gc.ca/epb/fpd. New

Environment Canada—Atlantic Region hosted an Environmental Management Workshop for Federal Facilities in February 2002. Sections of the workshop focused on pollution prevention, including Part 4 of the *Canadian Environmental Protection Act, 1999*. Approximately 80 individuals from 15 federal departments/agencies in Atlantic Canada participated. New

In 2001–2002, several federal departments made significant strides in delivering Internet-based environmental training that incorporates aspects of pollution prevention. The Department of Foreign Affairs and International Trade delivered the Introduction to Environmental Assessment Virtual Campus course. Health Canada implemented an Environmental and Sustainable Development online training tool. Western Economic Diversification Canada developed a Sustainable Development Online Learning Tool in partnership with the Western Canada Business Service Network. New

The Communication Research Centre Canada, an agency of Industry Canada, has an active Employee Awareness Program. Led by the Energy Action Team, the program helps educate personnel about diligent energy use within the workplace by promoting the Lights Off Initiative. Energy has also been saved through use of advanced building automation controls and energy monitoring software and hardware. New

Transport Canada developed a "how to" manual in early 2002 for use by policy and program staff when completing strategic environmental assessments (SEAs) of their proposed initiatives. In total, 85 department employees have been trained in the SEA process. Pollution prevention plays a key role in mitigating environmental impacts, and Transport Canada is obligated to ensure that SEAs are conducted on all applicable policy, plan, and program proposals. New

### Behaviour Change

A study in 2000 estimated federal employee carbon dioxide emissions from transportation at 1.5 megatonnes per year. In response, Transport Canada, Health Canada, Environment Canada, and other federal departments promote "green" forms of transportation—walking, biking, public transit, and carpooling—to reduce employee-related emissions. For instance, Transport Canada provides bike racks at its Ottawa headquarters, and 51% of its employees participated in the National Commuter Challenge, an event involving several federal departments. Canada Post promotes alternative commuting options by offering incentives such as the Rainy Day Pass and a lower parking rate pass, available to employees using such options and only occasionally requiring parking. Environment Canada—Quebec Region recently implemented a federal employee travel management program to reduce single-occupant vehicle travel by federal employees for work purposes (both employee travel between residence and work and business travel within the Quebec City–Windsor corridor). The results of this project indicate a 20% reduction in greenhouse gas emissions relative to 1999, the baseline year. Also, greenhouse gas emissions data related to federal employee travels will now be tracked within the travel expert system. Updated

### Greening the Office

Agriculture and Agri-Food Canada has installed video conferencing equipment in 39 boardrooms, desktop cameras, and one state-of-the-art E-conference facility. Adopting video conferencing technology will reduce the department's air emissions resulting from air and ground travel. New

Many federal departments have taken action to prevent the release of ODS.

#### PREVENTING RELEASE OF OZONE-DEPLETING SUBSTANCES

Federal activities account for about 10% of ozone-depleting substances (ODS) in use in Canada. Federal use of halocarbons includes refrigeration and air-conditioning, fire suppression, solvent degreasing, sterilization, pest control, and laboratories. Halocarbons are of national and international concern because they cause stratospheric ozone depletion (with a few exceptions) and contribute to climate change. Federal facilities are subject to the Federal Halocarbons Regulations under the *Canadian Environmental Protection Act, 1999* on federal lands. The regulations address the prevention of ODS pollution and certain alternatives. Many federal departments have taken action to prevent the release of ODS. For example, Health Canada's Longueil Lab developed an ODS inventory and prepared a phase-out plan. Fisheries and Oceans Canada has removed 75% of its halon fire suppression systems at land-based facilities in the Maritimes Region, replacing many with hand-held carbon dioxide-based extinguishers. Abroad, the Department of Foreign Affairs and International Trade installed an ODS refrigerant recovery and recycling system for on-site reuse in New Delhi.

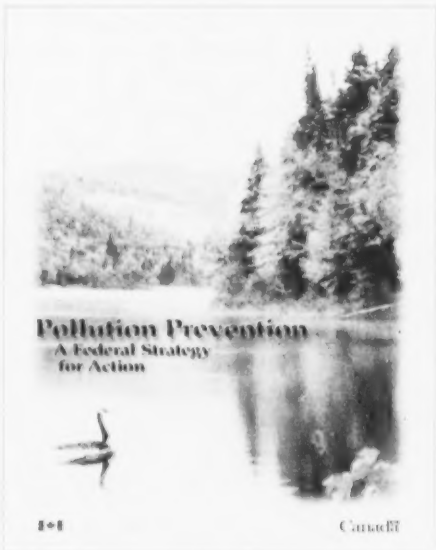
#### POLLUTION PREVENTION PLANNING COURSE AND CERTIFICATE

Environment Canada's National Office of Pollution Prevention and Environment Canada—Ontario Region contributed to the development of the 2.5-day "Pollution Prevention Planning & Beyond" course. The course is directed towards pollution prevention (P2) practitioners—professionals who are responsible for designing, implementing, and maintaining P2 programs for themselves or for businesses/organizations in Canada. The course is delivered by the Canadian Centre for Pollution Prevention and is directly linked to a P2 "planner" certificate. In 2001, 35 environmental professionals participated in this training course at Royal Roads University, University of Toronto, and University of Waterloo. A one-day P2 planning introductory seminar has also been delivered. For more information, visit http://www.c2p2online.com.

**UPCOMING PROJECTS**

Natural Resources Canada's Air Emissions Characterization Program will collect and analyze air emissions data from its facilities and produce action plans where corrective action may be required (e.g., maintenance of equipment, changes in practices or processes, etc.). A prioritization exercise will be completed before commencing characterization studies at specific facilities.

Human Resources Development Canada will evaluate all its fleet vehicles to determine the feasibility of purchasing alternative fuel vehicles and converting existing ones. It is also in the process of developing a Green Maintenance Checklist for approval and distribution to regions in the coming fiscal year. The checklist will include a series of tip sheets on driving and maintenance. When a fleet vehicle is serviced, the checklist is given to the mechanic for identification of completed green maintenance steps.




*Pollution Prevention – A Federal Strategy for Action* outlines the federal government's commitment to pollution prevention.

*To view* Pollution Prevention—
A Federal Strategy for Action, *visit*
*http://www.ec.gc.ca/pollution/strategy.*

**TRACKING PROGRESS AGAINST *POLLUTION PREVENTION—A FEDERAL STRATEGY FOR ACTION*[1]**

**Goal:** Institutionalize pollution prevention across all federal government activities

| Actions: | Status: | Examples: |
|---|---|---|
| 1. Incorporate pollution prevention into federal legislation. | Ongoing | • *Canadian Environmental Protection Act, 1999*<br>• *Nunavut Waters and Nunavut Surface Rights Tribunal Act* |
| 2. Establish and implement green policies. | Ongoing | • Significant number of activities within Greening of Government Operations |
| 3. Establish a Commissioner of the Environment and Sustainable Development to advance pollution prevention in the federal government. | Complete | • Commissioner established following changes to the Auditor General Act in 1995 |
| 4. Integrate pollution prevention into departmental policies and programs. | Ongoing | • Environment Canada's Pollution Prevention Team<br>• Atlantic Canada Opportunities Agency's program delivery<br>• Federal Buildings Initiative<br>• EnviroClub™ for Federal Facilities |

1 This table summarizes the linkages to programs and initiatives undertaken in pollution prevention with the federal government's action plan on pollution prevention within federal government operations.

*On the Internet, view this report at http://www.ec.gc.ca/p2progress.*

# Progress with Other Governments

## Federal pollution prevention strategy goal: Foster a national pollution prevention effort.

*National Partners*

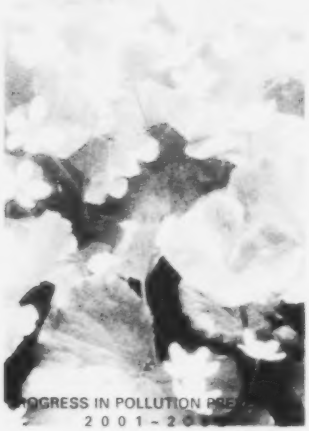
Canadian governments have cooperated through the Canadian Council of Ministers of the Environment (CCME) since the early 1990s to address the phase-out of substances such as chlorofluorocarbons (CFCs) and halons that can deplete the ozone layer. The Federal–Provincial Working Group on Ozone-Depleting Substances and Halocarbon Alternatives has developed Canada's Strategy to Accelerate the Phase-Out of CFC and Halon Uses and to Dispose of the Surplus Stocks, to achieve an orderly and affordable phase-out of CFCs and halons in Canada. An important component of the strategy is the National Action Plan for the Environmental Control of Ozone-Depleting Substances (ODS) and their Halocarbon Alternatives. The Action Plan provides a national framework for a harmonized approach by the federal, provincial, and territorial governments for implementation of an ozone layer protection program. CCME approved both the strategy and revised National Action Plan in May 2001.

**2001 CCME POLLUTION PREVENTION AWARDS**

The Canadian Council of Ministers of the Environment (CCME) gives national recognition to companies and organizations showing innovation or leadership in pollution prevention. The 2001 CCME Pollution Prevention Awards were presented to the following recipients:

- Calgary Transit's "Ride the Wind" project in Calgary, Alberta, for innovative design and implementation in powering its entire 100-car light-rail transit fleet with wind-generated electricity for the next 10 years.
- Cambridge Memorial Hospital (CMH) in Cambridge, Ontario, for developing a comprehensive environmental management system and being the first hospital in North America certified as ISO 14001 compliant. CMH's accomplishments have involved improving waste management programs to minimize the hospital's impact on the surrounding environment, increasing staff awareness of environmental issues through training, establishing arrangements with external stakeholders to address specific environmental issues, and developing programs to improve the hospital's environmental performance.
- School District 43 in Coquitlam, British Columbia, for its resource conservation program, which reduced energy consumption per unit area by almost 12.9% and emissions per unit area by 13.6%. The district achieved absolute reductions in greenhouse gas emissions of 5.7%, which represent more than 3300 tonnes of greenhouse gases annually.
- Dana Canada, Spicer Driveshaft Division, Thorold, Ontario, in the medium-sized business category, for its process improvement approach, which led to the removal of parts washers in two departments and the reduction of nitrogen oxide and other contaminant emissions by more than 60%.
- Dana Canada, Thorold Frame Plant, Thorold, Ontario, for reformulation of a draw compound and parts washing soap, which reduced employee skin irritation, water consumption, wastewater treatment, and energy consumption. It reduced parts washer water temperature, producing annual energy cost savings of more than $20,000 and a 28% reduction in greenhouse gas emissions.
- IBM Canada in Bromont, Québec, large business category, for developing a micro-chip joining process that eliminated chemical solvent cleaning and reduced the manufacturing cycle time by 20%. In addition, advances in water treatment increased treatment efficiency by eliminating hazardous wastes and reutilizing energy. Ozonation of utility plant waters reduced water consumption and minimized chemical treatment requirements. Savings from these three pollution prevention projects exceed $1.5 million annually.

For more details on the CCME awards, visit the CCME website at http://www.ccme.ca.



## Section 2B: Progress with Other Governments (continued)

***Provincial, Territorial, and Municipal Partners***

The City of Toronto revised its sewer use bylaw after City Council decided to stop incineration and implement 100% biosolids beneficial use by December 31, 2000. Environment Canada assisted the City with pollution prevention aspects of the new bylaw. In 2001–2002 Environment Canada financially supported and participated in the pollution prevention training sessions provided by the City for industry sectors affected by the bylaw.

Industry Canada's Environmental Affairs Branch, working in partnership with industry, municipalities, associations, and provincial, and federal governments, began assessing the feasibility of a municipality-based environmental management system (EMS) using the ISO 14001 standard. A one-year municipality-based EMS pilot initiative will deliver four workshops to facilitate the implementation of a municipal EMS. Municipalities involved in the initiative are working with Environment Canada on the pollution prevention components of the EMS. The first workshop in Vancouver, British Columbia, in March involved 50 participants. Environment Canada—Atlantic Region is subsidizing participation costs for four Atlantic Region municipalities.

In March 2002, the Governments of Canada and Quebec, along with the Société de Transport de Montréal, Rothsay Laurenco, the Canadian Renewable Fuels Association, and the Fédération des Producteurs de Cultures Commerciales du Québec, launched the BIOBUS biodiesel demonstration and impact assessment project in Montréal. The project will gain practical experience in the use of biodiesel under real-life conditions, particularly in cold weather, and demonstrate the feasibility of supplying biodiesel to a mass transit company. It will also assess the economic and environmental impact of using this fuel, which is made from recycled sub-food-grade vegetable oil and animal fats. With a budget of over $1.3 million, the one-year project will require 500 000 litres of biodiesel and is the largest endeavour of this nature implemented in North America.

***Regional Initiatives***

The five-year Georgia Basin Ecosystem Initiative supports key priorities such as protecting air and water quality, developing sustainable communities, and building partnerships to maintain the viability of the region in British Columbia. Efforts to improve water quality include a Stormwater Management Guidebook, piloted within the Regional District of Nanaimo, to assist local governments in developing effective programs to minimize the environmental impacts of stormwater. The Georgia Basin Futures Project is using high technology to engage the public in an interactive process that shows us how the choices we make can impact our environment. The goal is to enhance human well-being while protecting ecological health in the Georgia Basin by 2040. For more information, visit http://www.pyr.ec.gc.ca/georgiabasin/gbeiIndex_e.htm.

Canada's National Program of Action for the Protection of the Marine Environment from Land-based Activities (NPA) is led by Fisheries and Oceans Canada and Environment Canada and has been prepared through the collaborative efforts of the federal, provincial, and territorial governments. The NPA complements integrated management in the coastal zone, coastal marine protected areas, and pollution prevention. In November 2001, Canada made its first National Report to the United Nations Environment Programme on NPA implementation. This report describes the current framework for managing the marine environment in Canada, types of programs under way across the country, and how these programs are contributing to NPA goals. For more information, visit http://www.ec.gc.ca/press/nat_b_e.htm.

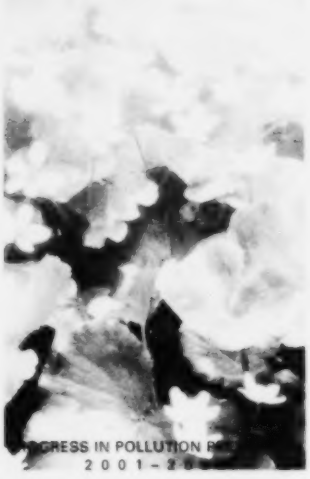
Environment Canada assisted the City of Toronto with the P2 aspects of its revised sewer use bylaw, which aims to implement a 100% biosolids beneficial use policy.

The governments of Canada and Ontario have drafted the Canada–Ontario Agreement Respecting the Great Lakes Basin Ecosystem (COA). The Agreement outlines how the two governments will cooperate and coordinate their efforts to restore, protect, and conserve the Great Lakes basin ecosystem. It builds on the actions taken through previous agreements and focuses priorities for future actions. The draft COA was made available for public comment. For more information, visit http://www.on.ec.gc.ca/coa/.

Pollution prevention initiatives under Environment Canada—Atlantic Region's Municipal Wastewater Strategy focused on improving awareness of the need for control of pollutants before they enter the sewage system in order to protect pipes, workers, treatment plants, biosolids, and the receiving environment. In partnership with Atlantic Coastal Action Program

The Aboriginal and Northern Climate Change Program focuses on engaging Aboriginal people and Northerners in climate change activities.

organizations, general and technical briefings were provided to federal, provincial, and municipal officials and the public. At the 2001 Canadian Pollution Prevention Roundtable in St. John's, Newfoundland, Environment Canada initiated and supported formation of a Municipal Government Workgroup. The workgroup is where municipalities can work collaboratively with one another and with other partners to prevent pollution locally, regionally, and nationally. In addition, the department promoted and provided technical advice on the incorporation of pollution prevention into the national Municipal Wastewater Effluent Risk Management Strategy, Nova Scotia's water and sewage policies, the Halifax Harbour Solutions Project, and Public Works and Government Services Canada's Water Infrastructure Model Screening Project.




### *Partnerships with the Aboriginal Community*

Indian and Northern Affairs Canada, in partnership with Natural Resources Canada, has developed the Aboriginal and Northern Climate Change Program (ANCCP) to help Canadians meet the Kyoto Protocol target of reducing greenhouse gas emissions 6% below 1990 levels by the period 2008–2012. Objectives of ANCCP focus on engaging Aboriginal people and Northerners in climate change activities and undertaking specific initiatives to address the energy needs of Aboriginal and northern communities.

In April 2002, the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* was passed. One of the main objectives of this statute is the prevention of water pollution in Nunavut. The passage of the Act fulfils the requirement for legislation clarifying the Board's and Tribunal's powers and establishes a water management and surface rights regime for Nunavut.

As part of Health Canada's 2000 Sustainable Development Strategy, the First Nations and Inuit Health Branch is working to increase energy efficiency and reduce air emissions at all its hospital facilities. Information collected for the air emissions summary will be used to determine where Health Canada should invest resources in air emissions evaluations or audits.

### UPCOMING PROJECTS

Environment Canada—Pacific and Yukon Region partnered with Western Economic Diversification Canada and the Fraser Basin Council to fund a study to identify communities within British Columbia for pilot eco-industrial projects. Eco-industrial projects include the design of products, processes, and industrial infrastructures that interlock with natural ecosystems to improve the efficiencies of material flows and reduce the ecological footprint of an industry's processes and products. Two potential projects for the near future address greenhouse gas emissions and toxics and waste reduction.

Two Agriculture and Agri-Food Canada research facilities in collaboration with the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec agreed to undertake a research project aimed at reducing greenhouse gas emissions produced by Canadian farmers.

### TRACKING PROGRESS AGAINST *POLLUTION PREVENTION—A FEDERAL STRATEGY FOR ACTION*[1]

**Goal:** Foster a national pollution prevention effort

| Actions: | Status: | Examples: |
|---|---|---|
| 1. Review legislation, regulations, and policy for opportunities to harmonize approaches to pollution prevention. | Ongoing | • Canadian Council of Ministers of the Environment (CCME) Canada-wide Standards |
| 2. Develop practical tools, such as guidelines and codes of practice, to enable people to implement pollution prevention at an operational level. | Ongoing | • Municipal Environmental Management System pilot<br>• Municipal Wastewater Effluent Risk Management Strategy |
| 3. Educate the public about pollution prevention and train relevant groups in the technical aspects of pollution prevention. | Ongoing | • CCME Pollution Prevention Awards |

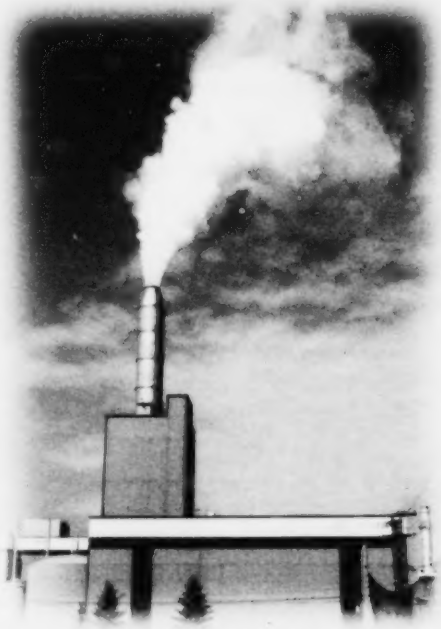
1 This table summarizes the linkages to programs and initiatives undertaken in pollution prevention with the federal government's action plan on pollution prevention with other orders of government in Canada.

# Progress with the Private Sector

## Federal pollution prevention strategy goal: Achieve a climate in which pollution prevention becomes a major consideration in private sector activities.

***Industrial Pollution Prevention***

The Accelerated Reduction and Elimination of Toxics (ARET) program was a multi-stakeholder pollution prevention and abatement initiative. Through voluntary actions, it sought virtual elimination of 30 persistent, bioaccumulative, and toxic substances, as well as significant reductions in emissions of another 87 toxic substances. Overall, participants have reported a 72% reduction in the release of toxics included in the ARET program from base-year levels. A successor program is under development. The Steering Committee is working to define a program that addresses toxic substances, including the *Canadian Environmental Protection Act, 1999* Schedule 1 substances and other pollutants from the National Pollutant Release Inventory substances list. Update



The Canadian Industry Program for Energy Conservation represents more than 5000 companies and reports on approximately 95% of total industrial energy demand.

The Canadian Industry Program for Energy Conservation (CIPEC) represents more than 5000 companies and reports on approximately 95% of total industrial energy demand through 25 task forces. CIPEC's aggregate target is a 1% overall improvement in industrial energy intensity[2] per year through to 2005. Building on CIPEC, Natural Resources Canada is working with industry through the Industrial Energy Innovators Initiative to explore energy efficiency options and strategies. Based on floor space, by March 2002, 29.5% of the commercial and institutional sectors had been recruited as innovators. Projects funded by March 2002 should result in greenhouse gas reductions of 132 kilotonnes per year. For more information on CIPEC, visit their website at http://oee.nrcan.gc.ca/cipec/ieep/cipec/index.cfm. Update

Industry Canada reviews the success of select voluntary pollution prevention measures and identifies areas where improvements could be made, as well as candidate sectors for new initiatives. For example, Industry Canada participated as a member of the Government Advisory Panel to the Vinyl Council of Canada Environmental Management Program (EMP). The EMP consists of six guiding principles, five commitment areas, and a series of practical action steps designed with pollution prevention as its overall objective. The Council issued its second annual report on the EMP in December 2001. For more information, visit http://www.plastics.ca/vinyl. Update

In June 2001, a new Policy Framework for Environmental Performance Agreements was approved by the federal Minister of the Environment, which will strengthen the effectiveness of Environment Canada's voluntary initiatives. Environmental Performance Agreements are voluntary agreements negotiated among industry, government agencies, and non-governmental organizations to achieve specified environmental results. In 2001–2002, three agreements were signed: a Memorandum of

2 Energy intensity is the total energy consumed by a sector divided by the total amount of activity in that sector over a one-year period.

Understanding with the Canadian Chemical Producers' Association, which sets out targets to reduce releases of volatile organic compounds; an Environmental Performance Agreement with Dow Chemical, which sets out targets to reduce the release of 1,2-dichloroethane; and an Environmental Performance Agreement for a monitoring program that will be used to assess the risks associated with emissions of refractory ceramic fibre. New

### *Sector-Specific Initiatives*

#### Agriculture and Food

In June 2001, Environment Canada—Atlantic Region released national guidance documents for use in the environmental assessment of freshwater and marine aquaculture projects. The guidelines emphasize the value of pollution prevention in project siting and design to minimize the potential for adverse impacts. New

A pilot project in Prince Edward Island's Bedeque Bay determined whether daily, specific weather-related spray advisories to farmers would influence pesticide spraying decisions. The project was a cooperative effort between the Bedeque Bay Environmental Management Association and Environment Canada. Seventeen farmers received a daily spraying advisory indicating the probability of either spray drift or rain-induced runoff. An end of the season survey revealed that 30% of farmers changed their practices based on the information, resulting in a reduced potential for drift and runoff. A second Environment Canada-led project modelled the effectiveness of soil conservation practices in protecting water quality. Model simulations indicate that pesticide compounds used in potato production in Prince Edward Island are lost from target fields, mainly dissolved in runoff water, and, to a lesser extent, adhered to soil particles. Overall, modelling predictions show that soil conservation measures such as strip cropping within terraces or strip cropping alone can be highly effective in reducing pesticide loss from fields. New

Soil conservation measures such as strip cropping within terraces or strip cropping alone can be highly effective in reducing pesticide loss from fields.

#### Automotive

The Automotive Parts Manufacturers' Association negotiated a five-year Environmental Performance Agreement with Environment Canada and Industry Canada. The agreement builds pollution prevention performance targets into an ISO 14001 Environmental Management System platform. Targets for the association include a 20% reduction in volatile organic compound emissions by 2007 and a 3% reduction in carbon dioxide emissions by 2007, both from a 2000 base year; and individual facility pollution prevention initiatives for targeted toxic substances. Facilities will be registered to ISO 14001 by December 2003. This agreement should be finalized by year-end 2002. For more information, visit http://www.apma.ca. Update

Now in its ninth year, the Canadian Automotive Vehicle Manufacturing Pollution Prevention Project has a goal of producing a verifiable reduction and/or elimination of persistent toxics and other substances used, generated, or released in automotive manufacturing facilities. The project is an industry – government cooperative partnership involving the Canadian Vehicle Manufacturers' Association (CVMA), Environment Canada, the Ontario Ministry of the Environment, DaimlerChrysler, Ford, and General Motors. A combination of techniques has reduced and/or eliminated at the source more than 363 356.89 tonnes of industrial solid waste and 40 777.13 tonnes of toxic chemicals and other substances of concern. In 2002, the CVMA began renegotiating an agreement with Environment Canada that will build pollution prevention targets into the ISO 14001 Environmental Management System platform. For more information, visit http://www.cvma.ca. Update

Under Natural Resources Canada's EnerGuide for Vehicles initiative, vehicle manufacturers voluntarily attach an EnerGuide label to new vehicles sold in Canada. The label helps consumers select the most fuel-efficient vehicle for their needs by giving the vehicle's fuel consumption rating and estimated annual fuel costs. For the period November 2001 to June 2002, the department distributed 518 000 copies of the Fuel Consumption Guide. Update

The Natural Gas for Vehicles Program provides a financial incentive for the purchase of vehicles capable of operating on natural gas and for fuelling infrastructure. Over 1500 vehicles and five fuelling facilities have been funded to date through Natural Resources Canada. The program applies to regions of Canada serviced by Alberta natural gas and is delivered through agents from the natural gas vehicle industry. New

The Switch Out Program is Canada's first program to address the use of mercury in vehicles and the release of mercury when vehicles are recycled at their end of life. With support from various stakeholders, including Environment Canada, approximately 2500 mercury switches were recovered from vehicles during the pilot project. The long-term goals are to collect 30 000 mercury switches, engage the participation of 100 automobile recyclers in Ontario, and expand the program across Canada. For more information, visit http://www.switchout.ca. New

**Building Design**

Industry Canada, in partnership with Greater Vancouver Regional District and the private sector, has undertaken an initiative to design and develop a working prototype of a sustainable building, affordable within current market constraints. One prototype design objective is the reduction of the pollutants associated with building construction and operation. During 2001–2002, the "workbook" was consolidated into a series of displays and presentations and incorporated into an outreach program targeted at architects, building engineers, planners, developers, suppliers, regulators, and the public. New

Industry Canada commissioned a design protocol for an "Eco-Industrial Complex"—a type of eco-industrial park contained in a single facility. The complex combines the principles of industrial ecology, eco-efficiency, and green building design. One design objective is the overall reduction of pollutants from the facility, through by-product synergy, designed eco-efficiency, and green building design features. During 2001–2002, a draft Eco-Industrial Complex design protocol was completed, using a proposed development as a case study. New

**Chemical**

The Canadian Chemical Producers' Association, Environment Canada, Industry Canada, Health Canada, and the governments of Ontario and Alberta signed a new Memorandum of Understanding (MOU) in February 2002. The MOU will be in force until December 31, 2005, and will further reduce volatile organic compound emissions that contribute to smog. Update

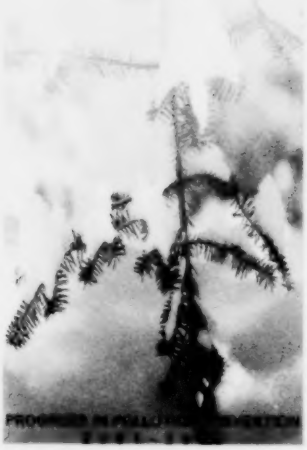
**Construction**

Natural Resources Canada's International Centre for the Sustainable Development of Cement and Concrete promotes the use of EcoSmart™ concrete. This concrete has the potential to substantially reduce emissions of carbon dioxide by substituting fly ash and other materials for the Portland cement traditionally used in concrete. Fly ash is a by-product of coal-burning power plants and is normally destined for landfill. Replacing one tonne of cement with one tonne of fly ash offsets industrial carbon dioxide emissions by approximately one tonne, in addition to providing a use for an industrial by-product. During 2001–2002, Natural Resources Canada helped transfer EcoSmart™ concrete technology to the architecture, construction, engineering, and materials communities by conducting and participating in seven seminars and completing the Design Mission for a highway project in India. For more information, visit http://www.ecosmart.ca. Update

The use of EcoSmart™ concrete has the potential to substantially reduce emissions of carbon dioxide.

**HELPFUL ENVIRONMENTAL BUSINESS INFORMATION**

To view the pollution prevention capabilities of Canada's best technology and service firms, visit Canadian Environmental Solutions (CES) at http://strategis.ic.gc.ca/ces. Developed by Industry Canada, CES addresses environmental problems related to water, air, soil, energy, climate change, and research and development. It is a direct link to solutions and the Canadian companies supplying them. CES works because it is extensive—it describes 2000 environmental problems and solutions, along with more than 900 solution-providing companies.



Industry Canada, along with Natural Resources Canada, Public Works and Government Services Canada, and the National Research Council, is addressing some of the challenges slowing the adoption and use of intelligent building technologies. These technologies, if adopted, may lead to improvements in energy efficiency and indoor air quality. In 2001–2002, a checklist of key intelligent building technologies and planning activities was developed for a demonstration project at an Industry Canada building in Ottawa. Update

Natural Resources Canada's Commercial Buildings Incentive Program provides financial incentives to building owners who construct buildings that are at least 25% more energy efficient than similar buildings constructed to the Model National Energy Code for Buildings. In 2001–2002, 63 new buildings received support. Since the program started, 164 new buildings have received support, resulting in an annual reduction of 23 kilotonnes of carbon dioxide. Similarly, Natural Resources Canada manages the R-2000 Program, which encourages the building of energy-efficient houses that exceed the efficiency level required by current Canadian building codes by 30%. In 2001–2002, all active builders were trained to a new standard, and more than 20 new builders and professionals received training. To date, over 10 000 houses have been certified as meeting the R-2000 performance standard for energy efficiency. An R-2000 house releases on average 1.4 tonnes of carbon dioxide per year less than a conventional house. New

For the past 15 years, an apartment building in central Halifax has been harnessing the sun to meet 20% of its domestic hot water requirements. The building is equipped with 100 roof-top solar panels. Original installation costs were offset by a federal solar energy grant from Natural Resources Canada. Environment Canada is currently working with the apartment owners to increase the solar fraction from 20% to 70% by improving thermal storage capacity. The apartment building owner estimates savings of about 20% of the domestic hot water load, or 20 000 litres of fuel per year. The underground thermal energy storage pilot project should double fuel oil savings and reduce greenhouse gas emissions by another 42 tonnes, giving a total reduction of 100 tonnes. New

Environment Canada—Prairie and Northern Region, in partnership with the Alberta Roadbuilders and Heavy Construction Association, developed a pollution prevention manual with the goal of encouraging the reduced use of toxic substances and improved environmental performance. Long-term targets include the adoption of the manual by the Cities of Edmonton and Calgary as part of their road building contracts. New

**Furniture Manufacturing**

Environment Canada introduced a pollution prevention project in the Quebec furniture industry. The project's aim is to reduce emissions of volatile organic compounds and greenhouse gases and products identified as hazardous or toxic under the Canadian Environmental Protection Act, 1999, such as solvents, paints, and pigments. Environment Canada—Quebec Region developed a tool for diagnosing pollution prevention opportunities (e.g., water-based coatings and more efficient application equipment) in the wood finishing industry. The tool will be used to identify facilities having the greatest potential for implementing pollution prevention activities, as well as to train facility employees. Update

Further consultations were held with industry, non-governmental organizations, and the federal and provincial governments aimed at reducing volatile organic compound (VOC) emissions from the application of coatings in the wood finishing industry. With the support of Environment Canada, the Canadian Council of Ministers of the Environment will publish a code of practice within the next two years. The code may encourage voluntary emissions reductions or may serve as a model for regulation of the industry by provincial or regional governments. There are approximately 900 wood finishing plants in Canada, and it is estimated that this group emits 11.2 kilotonnes of VOCs annually. New

**Harbours/Marinas/Shipyards**

The CleanMarine Eco-Rating Certification Project is a three-year agreement between the Ontario Marine Operators' Association, the Ontario Ministry of the Environment, and Environment Canada to certify 150 marinas in Ontario and rate them based on their environmental performance. Participants are provided with a CleanMarine Best Management Practices Handbook. Marinas are audited for their performance and awarded an achievement rating. Marinas participating in the program must be committed to continuously improving their environmental practices and performance each year. Certified marinas are identified and listed in the Ontario Marina Directory. The certification program was developed with input from various steering committee members from the CleanMarine Partnership, which includes representatives from the boating industry, associations, media, government agencies, and TerraChoice Environmental Services Inc. In 2001, 50 Ontario marinas were rated, and another 50 will be rated in each of 2002 and 2003. For more information, visit http://www.omoa.com. Update

Fisheries and Oceans Canada established and implemented environmental management plans (EMPs) for 438 of 638 client-managed small craft harbours. An EMP's purpose is to identify all harbour activities and operations that might have potentially negative impacts on the environment and outline a plan to manage the operations and activities in a way to reduce these impacts. Update

Environment Canada—Atlantic Region, in partnership with National Defence, is committed to reducing marine environmental impacts from ship maintenance. Both departments are currently exploring the use of hydrosprays as alternatives to abrasive polishing for removing marine growth from ships. In addition, tender specifications on military ship maintenance have been revised to include more detail on environmental issues from contractors. Update

**Health Care**

The Healthcare EnviroNet website was established with support from Environment Canada—Ontario Region and is developed and maintained by the Canadian Centre for Pollution Prevention in consultation and partnership with health care and non-governmental organizations. The website shows health care staff how to take action to reduce their facilities' environmental impact. Similarly, Health Canada supports the Healthcare EnviroNet website and has worked in partnership with various medical organizations (e.g., Canadian Association of Physicians for the Environment and Canadian Coalition for Green Health Care) to develop materials on greening Canadian hospitals. For more information on these initiatives, visit http://www.greenhealthcare.ca and Healthcare EnviroNet at http://www.c2p2online.com (click on affiliated websites). Update

In 2001, Environment Canada—Atlantic Region and the Nova Scotia Department of Environment and Labour initiated a pollution prevention program targeting mercury use at 17 hospitals. Preliminary evaluation of the mercury use pattern surveys indicates that pollution prevention opportunities (e.g., product substitution) exist. In addition, many hospitals have already made efforts to reduce mercury use and implement environmentally responsible mercury management practices. Despite those efforts, mercury concentrations in some hospital wastewaters remain higher than background concentrations. Phase 2 focuses on better tracking of mercury through a hospital sewer system, and identification of pollution prevention opportunities at two provincial hospitals is under way. New

In keeping with the Canadian Council of Ministers of the Environment's goal of cost-effective actions to minimize releases of mercury and its compounds, a Canada-wide Standard (CWS) for reducing environmental releases of dental amalgam has been developed. The removal of old fillings and shaping/polishing of new fillings generate a mercury-containing waste that becomes a concern, as these practices result in amalgam particles being vacuumed from the mouth and discharged to sewage systems. The CWS seeks to significantly improve the capture of amalgam wastes through best management practices. Best management practices are defined as including the use of an ISO-certified amalgam trap, or equivalent, and appropriate management of waste so that mercury does not enter the environment. The standard sets out to achieve a 95% national reduction in mercury releases from dental amalgam waste discharges to the environment by 2005, from a base year of 2000. For more information, visit http://www.ec.gc.ca/mercury. New

Environment Canada and the Prince Edward Island Department of Fisheries, Aquaculture and Environment signed a Memorandum of Understanding on Dental Amalgam Waste Management. Phase 1 of the project, undertaken in 2001–2002, involved activities aimed at achieving compliance with the Canada-wide Standard for Mercury in Dental Amalgam. The feasibility, including costs, of installing ISO 11143-certified dental amalgam separators was investigated, opportunities for mercury reduction were identified, and educational materials for dentists were developed. Phase 2 is under development and will include testing of an Environmental Technology Verification sampling protocol and *in situ* testing of the effectiveness of the separators. New

**Information Technology**

Industry Canada is assisting the Information Technology Association of Canada (ITAC) in the development of an Extended Producer Responsibility Program for the take-back and management of waste and surplus electronic and telecommunications equipment. Extended Producer Responsibility is a waste minimization strategy that extends the producers' traditional environmental responsibilities to the post-consumer stage of a product's life cycle. This sends an implicit signal to producers to alter the design of their products so as to reduce

their environmental impact. ITAC produced for review a National Action Plan for the end of life information technology equipment recovery program. The target is 50% waste recovery by 2006. This initiative will reduce the potential releases of toxic substances such as mercury, lead, and cadmium. Other key partners engaged in this project include Environment Canada, Natural Resources Canada, the National Research Council, provincial governments, and municipalities. New

**Metal Finishing**

The Metal Finishing Industry Project is a partnership among Environment Canada, the Ontario Ministry of the Environment, the Canadian Association of Metal Finishers, and related industry associations that began in 1993. The project's goals are to develop tools for formulating pollution prevention plans for reduction of toxic substances, to promote development and implementation of site-specific pollution prevention plans, and to publish the progress of substance use reductions under the plans. The task force released its Eighth Progress Report in December 2001. There are 27 metal finishing companies participating in the project, with 51 documented case studies. For more information, visit http://www.camf-acfm.com. Update

**Mining**

Natural Resources Canada co-leads a North American consortium aimed at bringing hydrogen fuel cells to underground mining operations. The department is also leading the development of a small hybrid diesel–electric scooptram for narrow vein mines. The long-term objective is to retrofit underground mining vehicle fleets, currently powered by diesel fuel, with less polluting powertrains. In Canada, there are about 3500 underground diesel vehicles that emit 0.4 megatonnes of carbon dioxide per year. Total world underground carbon dioxide emissions from diesel vehicles are estimated at 4.5 megatonnes annually. Update

Natural Resources Canada is also heading a project to develop a narrow vein mining system that would mine only the veins and leave the surrounding rock in place using thermal fragmentation technology. This system will substantially reduce the use of chemical explosives. It could also be used in open pit mining. Another technology under development reduces energy consumption associated with mine ventilation. Electricity for ventilation represents approximately 40% of the electrical energy required for underground mine production. Ventilation on demand identifies when air is required, where it is required, and at what level. On-demand systems should reduce ventilation electrical costs by 30%. New

CANMET—Mining and Mineral Sciences Laboratories of Natural Resources Canada coordinates the government–industry Thiosalts Consortium aimed at developing innovative technology for the prevention, treatment, and monitoring of thiosalts produced during the processing of sulphur-rich ores. Degradation of thiosalts within the environment leads to increased acidity, which may affect fish in the receiving environment. Examples of techniques used to prevent thiosalts from generating acidity include bacterial oxidation of thiosalts and oxidation using hydrogen peroxide. Research has helped to increase understanding of thiosalt technical issues, allowing industry to comply with new regulations in some provinces. New

In 2001–2002, the first phase of the Toxicological Investigations of Mine Effluents (TIME) Network was launched by Natural Resources Canada's Mining and Mineral Sciences Laboratories. One of the TIME projects was Best Management Practices (BMP) for Ammonia in the Canadian Mining Industry. Ammonia is present in mine effluents due to the widespread use of nitrate-based explosives. Water contamination is primarily a result of spillage or lack of detonation. BMP plans and training can minimize ammonia discharges at the source. New

**Oil and Gas**

Environment Canada—Prairie and Northern Region supported the development of pollution prevention expertise and materials to assist in reducing the impact that the oil and gas sector has in the ecologically fragile areas of the Northwest Territories and Nunavut. A document outlining pollution prevention opportunities was finalized, as was a video detailing environmental management concerns with the disposal of drilling fluids in the North. The traditional use of in-ground sumps for disposal was identified as a significant toxic and environmental risk. Further work is required to identify alternative waste management techniques. Update

Natural Resources Canada, in partnership with industry, performs research on the management of oil and gas pipeline corrosion. This work helps industry reduce the incidence of oil and gas leaks. During 2001–2002, three computer models were developed for use in different aspects of corrosion prevention and management. New

**Printing and Graphics**

CleanPrint Canada is a pollution prevention project that works with printing and graphics firms, associations, and other governments to reduce and/or eliminate the use, generation, or release of toxic substances and other substances of concern. Environment Canada is a leader and funding participant in various regional organizations within CleanPrint Canada.

In Ontario, four print industry workshops were delivered by CleanPrint Ontario in 2001–2002 to achieve reductions in pollutant releases and comply with municipal pollution prevention bylaws, provincial regulations, and National Pollutant Release Inventory reporting. Negotiations were initiated to develop an Environmental Performance Agreement with the screen printing sector in Ontario.

In 2002, 25 of the 28 golf courses participating in the Ontario Golf Course EcoEfficiency Pilot Project met or exceeded the goals and objectives of the project.

CleanPrint British Columbia promotes environmental management tools and encourages printers to complete environmental management plans (EMPs). Long-term project goals include reduction of volatile organic compound (VOC) emissions from printing in the Lower Fraser Valley to 20% of 1985 levels by 2005, reduction of silver and VOC discharges to the Capital Regional District sewer system by 50%, and contribution to a 50% reduction in municipal solid waste in British Columbia. At the CleanPrint British Columbia website, printers can access best management practices, posters, how-to-guides for preparing EMPs, and a guide to environmental regulations.

Additional regional printing and graphics industry initiatives can be found at http://www.cleanprint.org. Update

**Tourism**

The Golf Course EcoEfficiency Project is a partnership between GreenLinks Eco-Efficiency Services (TerraChoice Environmental Services Inc.), Burnside Golf Services, and Environment Canada to promote pollution prevention and other environmental management initiatives. In 2002, the final year of a three-year agreement, 25 of the 28 golf courses participating in the Ontario pilot project met or exceeded the goals and objectives of the project. Many courses reduced pesticide and other chemical use and achieved reductions in water and energy consumption through implementation of pollution prevention initiatives and projects identified by the consulting team. For more information, visit http://www.greenlinks.net. Update

"Camp Green, Canada!" encourages recreational vehicle owners to use non-toxic wastewater treatment products in their holding tanks rather than environmentally harmful formaldehyde and quarternary ammonia-based compounds. Nova Scotia was the first province in Canada to embrace unified promotion of biological treatment alternatives. In 2001, the "Camp Green, Canada!" campaign was launched in public and private campgrounds across the country. Environment Canada from Atlantic Region, Ontario Region, and Pacific and Yukon Region along with Parks Canada promoted "Camp Green, Canada!" by distributing 100 000 campaign information cards and 1000 promotional posters to campground operators. In Ontario, 85 privately owned campgrounds participated by promoting the benefits of using non-toxic holding tank products. Three-year performance targets include 70% private, 80% provincial, and 100% federal campgrounds to be designated chemical free. For 2002, additional activities include development of an outreach plan for use in Quebec Region and Prairie and Northern Region and in the northern United States. For more information, visit http://www.campgreencanada.ca. Update

**Transportation**

In February 2000, a Memorandum of Understanding was signed by the Ottawa-Carleton Regional Transit Commission (OC Transpo) and Environment Canada to implement a number of pollution prevention (P2) projects. The main garage facility was chosen to demonstrate how various daily operational activities could be modified or changed to eliminate or reduce the risk of pollution. Project implementation took place throughout 2000 and concluded at the end of March 2001 with the development of a website document. Environment Canada and OC Transpo continue to work closely in monitoring

all P2 projects. For more information, visit http://www.on.ec.gc.ca/pollution/fpd/prevention/6700-e.html. Update

***Training and Awareness***

In Atlantic Region, Environment Canada offered a Marine Spill Response Operations Course in conjunction with the Canadian Coast Guard in January 2002. The course involved training for oil spill prevention, preparedness, and response. Update

Natural Resources Canada's Fleet$mart program helps the commercial vehicle fleet sector to improve energy efficiency, decrease operating costs, and reduce fleet operation emissions. The Fleet$mart Tool Kit contains guides on aspects of fleet energy management—from computerization and alternative fuel options to vehicle maintenance and procurement. Training in fuel-efficient driving techniques is another key product of the Fleet$mart Program. In 2001, 14 workshops were held with 280 driver trainers. For more information, visit http://fleetsmart.nrcan.gc.ca. Update

In 2001–2002, the Atlantic Canada Opportunities Agency (ACOA) developed a generic sustainable development strategy fact sheet for insertion in every letter of acknowledgement to ACOA program applicants. The sheet outlines the concept of eco-efficiency and benefits of operating an environmentally responsible business. In addition, all ACOA Program Officers received eco-efficiency training. Two eco-efficiency reviews were conducted as a pilot with the intention of developing industry case studies for marketing purposes. New

In 2001–2002, the Building Sustainable Enterprises program was launched. This initiative supports industry workshops on eco-efficiency concepts and tools, such as Design for Environment, Life Cycle Management, Environmental Management Systems, Eco-Reporting, Indicators, and Supply Chain Management. The first workshop, held in April 2002 in Vancouver, attracted approximately 50 participants. Industry Canada as well as Natural Resources Canada, Environment Canada, and the National Roundtable on the Environment and the Economy participate on the program's federal Steering Committee. New

In March 2001 the implementation of a P2 project at OCTranspo's main garage facility was completed.

***Small and Medium-Sized Businesses***

EnviroClub™ is a federal–private sector initiative launched by Environment Canada—Quebec Region in 1998 with financial support from Economic Development Canada, the National Research Council of Canada, and the Climate Change Action Fund. Its purpose is to introduce pollution prevention projects or develop environmental management systems in small and medium-sized businesses (SMEs). During 2001–2002, two Enviroclubs were established (Saguenay-Lac-St-Jean 2000 and Central Quebec), along with a total of 18 pollution prevention projects. To date, participating SMEs have achieved the following reductions: volatile organic compounds, 4.3 tonnes/year; hazardous waste, 505 tonnes/year; and greenhouse gases, 24 kilotonnes of carbon dioxide equivalent/year. Building on local business interest, the Atlantic Canada Opportunities Agency, in partnership with Environment Canada and Business New Brunswick, initiated a Miramichi EnviroClub™, where companies voluntarily undertook a series of workshops on environmental management and pollution prevention. This EnviroClub™ is being broadened to cover a larger area of northern New Brunswick. Update

The Toronto Region Sustainability Program is intended to advance the environmental performance of small to medium-sized enterprises and manufacturing facilities. Objectives include acting to reduce smog precursors and moving to zero generation of toxic wastes. The program will be delivered on Environment Canada—Ontario Region's behalf by the Ontario Centre for Environmental Technology Advancement in partnership with Environment Canada's National Office of Pollution Prevention, the Ontario Ministry of the Environment, the City of Toronto, and various stakeholders. The program activities started in 2001–2002 and will last three to five years. Pollutant reductions to date include 340 tonnes of volatile organic compounds, 15 kilograms of metals, 170 tonnes of process waste, 2000 tonnes of water, and 2 tonnes of greenhouse gases. Update

The Business Water Quality Program is a five-year partnership among Environment Canada, the Regional Municipality of Waterloo, and the Ontario Ministry of the Environment. The program educates small and medium-sized enterprises on the benefits of pollution prevention planning and the toxics reduction provisions of the *Canadian Environmental Protection Act, 1999*, with a primary goal of preventing spills to groundwater, surface water, and sewers. In 2001–2002, 14 facilities completed a facility review and assessment and realized the following: elimination of 415 litres of ethylene glycol/chlorinated cleaning solvents and 337 000 kilograms of phenolic resin filter paper; reduction of 200 tonnes per year of paint sludge, 110 cubic metres per year of water, and 8800 tonnes per year of carbon dioxide emissions; and reductions of biological oxygen demand, suspended solids, and phenols in the wastewater effluent. Update

The Environmental Supply Chain Management Pilot Project is aimed at small and medium-sized enterprises (SMEs), with the objective of exploring and developing the potential for supply chain management as a means to encourage greenhouse gas emission reduction activities. This project will encourage SMEs to make changes in business/production processes and use new technologies. The project steering committee consists of Industry Canada, Voluntary Challenge and Registry Inc., and industry representatives. New

Environment Canada was a partner in the EcoDesign Innovation (EDI) Pilot Program with Western Economic Diversification Canada, Industry Canada, and the Industrial Research Assistance Program of the National Research Council. EDI assists British Columbia's small manufacturing, plastics, food processing, and wood processing sectors to increase competitiveness through process efficiency. The EDI pilot stage ran from January 2001 until October 2001. Eight manufacturing companies participated in the program and demonstrated continuous progress by finding ways to reduce wastewater discharges, hazardous materials, greenhouse gas emissions, and natural gas, electricity, and water use. The total annual cost savings and increased revenue for the participating companies between October 2001 and October 2002 is projected to be $381,980. The simple payback for all dollars spent versus projected returns is 1.2 years. A second-stage pilot is planned for 2002–2003 and will take advantage of lessons learned during the first stage. New

In Fall 2001, Industry Canada launched a tool entitled "Three Steps to Eco-efficiency." This tool helps small and medium-sized manufacturers to develop an eco-efficiency program through checklists on self-assessment, strategies, and cost–benefit analysis. Efforts are now under way to make the tool available in multiple formats: online, downloadable, and hard copy. The tool accounts for 10–15% of the total 800 visits monthly to Industry Canada's eco-efficiency website. New

### *Research and Development*

Natural Resources Canada coordinated the Canadian Lightweight Materials Research Initiative (CLiMRI), a government–industry partnership aimed at producing advanced, lightweight components for vehicles. CLiMRI's technical focus is weight reduction in ground transportation vehicles, with the goal of reducing emissions through improved vehicle efficiency. Processes adopted by industry include heat treatment procedures for aluminum casting that greatly reduce energy consumption. During 2001–2002, Natural Resources Canada held two seminars to share the work of the past year with industry and the research community. Update

Technology Partnerships Canada is a technology investment fund operating out of Industry Canada that makes high-risk repayable investments in research, development, and innovation. In 2001–2002, the fund invested $57.26 million in seven projects with potential pollution prevention benefits. Project areas funded include improving energy efficiency in water treatment technology, reducing emissions of small gasoline engines, engine fuel control systems allowing the replacement of gasoline with less polluting fuels, fuel cells, and natural gas refuelling infrastructure. Update

The Ontario Sustainable Aquaculture Working Group includes Environment Canada, Fisheries and Oceans Canada, the University of Guelph, and others. The group is developing and testing approaches for maintaining acceptable water quality and fish habitat near aquaculture operations. Low biochemical oxygen demand feed formulations for rainbow trout are undergoing fish growth trials at the University of Guelph. Other projects include successful implementation of two cage culture fish manure collectors and evaluation of "aquaponics" for effluent management and reconditioning in intensive tilapia culture to remove nutrients so that the water can be reused in the farm. Update

Research and Technology Transfer in the Floriculture Industry is a University of Guelph, Ontario, research project in its seventh year. The project's purpose is to study nutrient recycling techniques without inhibiting plant growth and provide technology transfer to the agriculture and agri-food sector. A survey of 74 Ontario greenhouses assessed the extent of technology transfer based on the research conducted. Facilities with water recirculating systems reported a decrease of 81% in water use and 87% in fertilizer use compared with non-recirculating systems. As well, 53% of growers reported an increase or no change in crop quality and yield after switching to a recirculating system. With more experience and research, the case for recirculating systems will be more compelling to growers. Environment Canada provided partial project funding as well as guidance and follow-up on progress and site visit assistance. For more information, visit http://www.uoguelph.ca/hortsci/recirc/. Update

The Microwave-Assisted Processes (MAP) are a family of clean processing technologies developed and patented by Environment Canada's Environmental Technology Advancement Directorate. MAP technologies focus on using microwaves to enhance or accelerate biological, chemical, or physical processes. Economic and environmental benefits accrue from dramatically reduced energy and chemical consumption and improved performance in terms of product yield and quality and reduced wastes. As an example of the ability of MAP to contribute to pollution prevention, the U.S. Environmental Protection Agency has approved the use of a MAP method as a Standard Reference for the preparation of environmental analytical samples. This method is also an approved *Canadian Environmental Protection Act, 1999* regulatory Reference Method. The introduction of these methods to laboratories is significant. It is estimated that about 100 million litres of organic solvents are used in organic analytical laboratories annually, but the MAP method requires about 90% less solvent. Toxic solvents such as dichloromethane, currently used in conventional methods, can be avoided completely, greatly reducing human exposure. In most cases, energy requirements are also reduced by about 99%, producing a significant reduction in greenhouse gas emissions. Update

Industry Canada is promoting, contributing to, and participating in the development and implementation of the Innovation Roadmap on Sustainable Fuels and Chemicals from Biomass. The Innovation Roadmap will contribute to Canada's climate change objectives by developing opportunities for bioproducts alternatives and bioprocesses, which will contribute to reducing energy and emissions, including greenhouse gases. With this focus, a feasible target for total greenhouse gas reduction is approximately 23 tonnes per year of carbon dioxide equivalent by 2015. New

MAP technologies focus on using microwaves to enhance or accelerate biological, chemical or physical processes, which reduce energy and chemical consumption and improve performance.

**UPCOMING PROJECTS**

Western Economic Diversification Canada, in collaboration with Western Canada Business Service Network, developed a Sustainable Development Online Learning Tool. Intended program launch is in 2002–2003. Tool modules educate participants on concepts and practical approaches to sustainable development, including aspects of pollution prevention. The online training tool is hosted on Western Economic Diversification Canada's Extranet.

The Collision Industry Action Group (CIAG) is developing a national Internet-based training program for auto body repair shops. The Project STAR environmental training course will be accessible to approximately 2800 facilities in Ontario. The program's objectives are to develop understanding of the characteristics, sources, hazards, and impacts of waste, and the need to reduce wastes (particularly volatile organic compounds); and develop an understanding of pollution prevention objectives and financial benefits achievable from going beyond compliance. The project is an industry–government cooperative partnership involving Environment Canada, the Ontario Ministry of the Environment, CIAG, Canadian Automotive Institute, and members of the Canadian Paint Coatings Association. For more information, visit http://www.ciia.com.

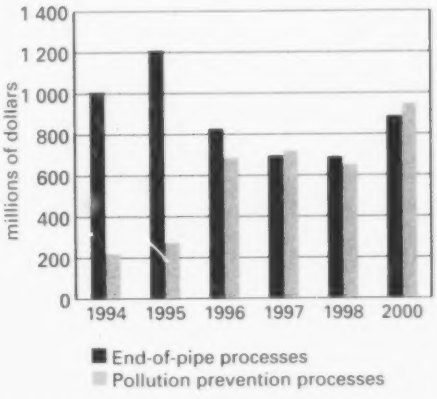
The House of Commons Printing Services are expected to be EcoLogo certified through the Environmental Choice Program in 2002–2003. Printing Services print virtually all House of Commons and Senate materials. When certified, this will be the first Federal Green Printing Operation. The Environmental Choice Program guidelines for printing services look at limiting the emissions of volatile organic compounds, the reduction of materials going to landfill sites, and resource conservation. Environment Canada has provided project direction and technical advice.

The Labour Environmental Alliance Society's (LEAS) "Cleaners, Toxins and the Ecosystem" project developed a pocketbook and workshops explaining how to identify toxic substances contained in cleaning products and how to find alternative cleaning products. Environment Canada—Pacific and Yukon Region is a key funding partner and is working with the LEAS to deliver more workshops. Up to 10 workshops will be delivered in 2002–2003, at sites that include "public" workplaces such as schools, recreation centres, and hospitals; "private" workplaces such as long-term care facilities, day cares, and commercial food production facilities; school boards, municipal governments, and large institutions (universities, colleges); and cleaning suppliers/building contractors.

Environment Canada has provided funding to support establishment of an online database of "green" Ontario dry cleaners. The database will be hosted on the Canadian Centre for Pollution Prevention website and will profile the environmental activities of dry cleaners. Consumers will be able to access the list and make an educated choice on dry-cleaning services. For more information, visit http://www.c2p2online.com.

Statistics Canada, through a "Survey of Environmental Protection Expenditures," collects data on the expenditures and practices made by primary and manufacturing industries, electric power and gas distribution facilities, as well as pipeline transportation. Since 1994, the first survey year, businesses have steadily increased their investments in pollution prevention processes. In 2000, companies spent over $940 million on pollution prevention equipment—that is, processes that eliminate or prevent the creation of pollution in the production cycle—up over 45% from 1998. In 2000, 58% of survey respondents indicated that they use an environmental management system, while 35% indicated that they participate in environmental voluntary agreements.

**CAPITAL EXPENDITURE ON POLLUTION PREVENTION AND CONTROL**




Statistics Canada, **Environment Accounts and Statistics Division, Statistics Canada,** *Survey of Environmental Protection Expenditures,* 2000, **Catalogue #: 11-001-XIE (11-001-XIF for French)**. Statistics Canada, *The Daily,* December 5, 2002

## Section 2C: Progress with the Private Sector (continued)

**TRACKING PROGRESS AGAINST *POLLUTION PREVENTION—A FEDERAL STRATEGY FOR ACTION*[1]**

**Goal:** Achieve a climate in which pollution prevention becomes a major consideration in private sector activities

| Actions: | Status: | Examples: |
|---|---|---|
| 1. Develop innovative pollution prevention programs. | Ongoing | • Camp Green, Canada!<br>• CleanPrint Canada<br>• Fleet$mart<br>• Commercial Buildings Incentive Program |
| 2. Promote pollution prevention through refocused research, development, and demonstration initiatives. | Ongoing | • Wet Clean Technology<br>• Canadian Lightweight Materials Research Initiative<br>• Sustainable Fuels and Chemicals from Biomass |
| 3. Promote the adoption of sustainable production in industrial and manufacturing processes. | Ongoing | • EcoSmart Concrete<br>• Canadian Vehicle Manufacturing Pollution Prevention Project<br>• Metal Finishing Industry Project<br>• Extended Producer Responsibility in the waste associated with information technology |
| 4. Implement economic instruments that will result in pollution prevention. | Developmental stages | • Provisions in new Environmental Performance Agreements and the successor program to Accelerated Reduction and Elimination of Toxics (ARET) |
| 5. Help small and medium-sized enterprises improve their environmental performance. | Ongoing | • EnviroClub™<br>• Toronto Sustainability Program<br>• EcoDesign Innovation Pilot Program |

1 This table summarizes the linkages to programs and initiatives undertaken in pollution prevention with the federal government's action plan on pollution prevention with the private sector.

# Progress with the Canadian Public

## Federal pollution prevention strategy goal: Provide access to the information and tools necessary to implement pollution prevention practices.

*Citizen-Driven Activities*

The EcoAction Community Funding Program is an Environment Canada program providing financial support to community groups for projects that will achieve results in the following areas: Clean Air and Climate Change, Clean Water, and Nature. To view stories of community groups in action, visit http://www.ec.gc.ca/ecoaction. Some examples of 2001–2002 projects that received EcoAction funding are provided below:

As an alternative to road expansion in the Halifax Regional Municipality, TRAX aims to reduce single-occupancy vehicle use and promote the increase of investments in sustainable transportation alternatives.

- TRAX is an ongoing project of the Ecology Action Centre in Halifax. As an alternative to road expansion in the Halifax Regional Municipality (HRM), TRAX is intended to reduce single-occupancy vehicle use and promote the increase of investments in sustainable transportation alternatives. To date, it has initiated a trip reduction program in six workplaces in HRM, with seven others considering participation. Other activities included a Bike to Work Week, a Commuter Challenge, and a public forum on a bike policy for HRM. TRAX efforts will contribute significantly to the local government's commitment to a 20% reduction in greenhouse gas emissions.

- The Roman Catholic Diocese of Charlottetown, Prince Edward Island, has initiated an environmental review of its parish buildings. The Enviro Church Program is expected to reduce energy use, water consumption, and wastewater production by 10% and hazardous household and chemical lawn products use by 20%. Also, educational materials will be supplied to parishioners to increase their awareness of the initiatives undertaken by their local church and to encourage similar efficiency in their own homes.

- Atlantic Coastal Action Plan (ACAP) Cape Breton implemented a project to improve the environmental performance of operations at the Nova Scotia Community College's campus in Sydney. With help from the students' association, ACAP drafted a green purchasing policy for the college, conducted a water audit and chemical use survey, and made recommendations for chemical use reduction. In addition, there are plans to collect and recycle a number of hazardous and solid waste streams, conserve 1500 cubic metres of water, reduce chemical waste by 70 litres, make recommendations for energy efficiency, and publish a blueprint manual for greening the Nova Scotia Community College's other facilities.

- Approximately 66 000 homes in Newfoundland and Labrador heat with oil. Aging oil tanks are a problem: some oil spills cause environmental damage and result in expensive remediation. The Conservation Corps of Newfoundland & Labrador initiated a Home Oil Check program to address leak prevention and reduce greenhouse gas emissions. Over 300 homes will receive a Home Oil Check assessment, including a report and information on heating with oil, oil tank

regulations and inspection, and spills. Also, homeowners receive an "EnerGuide for Houses," a tool to promote action and to demonstrate energy (and financial) savings from recommended upgrades. To date, 52 homes from over 60 communities have received an assessment. Previous energy efficiency assessments indicated potential reductions of an average of 2 tonnes of carbon dioxide per home per year.

- The Nova Scotia residential sector is responsible for 26% of provincial greenhouse gas emissions. In the Halifax Regional Municipality, Clean Nova Scotia initiated a project to conduct 400 home visits, including an energy assessment, water conservation measures, and climate change education. Participating homes receive a water conservation kit and information material for each component of the Green Home visit. The project should lead to an overall 5% reduction in energy and greenhouse gas production and up to an 8% decrease in water consumption.

- There is growing public concern about the public health and environmental effects of pesticide use. In 1997, pesticide sales in Canada totalled over $1.4 billion, 85% of which was for herbicides intended for use in lawns and gardens.[3] The New Brunswick Lung Association addressed this issue by launching the Healthy Lawn Program. Ten individuals were trained in hosting home get-togethers to discuss pesticide-free, healthy lawn maintenance in a friendly setting. Eighteen events were held, with more planned as the program expands to the rest of New Brunswick. Results to date indicate that over 70% of the participants committed not to use pesticides on their lawns for cosmetic purposes.

**WHAT IS SUSTAINABLE CONSUMPTION?**

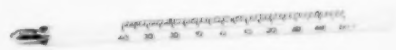
Sustainable consumption has been defined as the "use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations."[4]

Environment Canada hosted the second meeting of the North American Sustainable Consumption Alliance Workgroup. The North American Sustainable Consumption Alliance is a strategic partnership of people and organizations that are working to promote more sustainable consumption patterns in Mexico, Canada, and the United States. One of the Alliance's goals is to facilitate the shaping of a common North American vision of sustainable consumption. Discussions are also under way to organize a third meeting in Mexico.

In response to the need for information on the environmental practices, behaviours, and concerns of Canadian individuals and households, Statistics Canada is planning to conduct the Household and Environment Survey in 2003. Statistics Canada has developed a framework based on sustainable consumption, examining Canadians' understanding and perceptions of environmental issues, role of individual consumptive behaviours and public participation in environmental activities, and, finally, actual environmental practices. The themes that will be covered by the survey include water consumption and conservation, waste management and recycling, transportation decisions, use of pesticides and fertilizers, purchase of "green" products, knowledge and understanding of environmental issues, and civic engagement. A more limited version of this survey was conducted in 1991 and 1994, and the results were published in the Statistics Canada report, "Households and the Environment" (Catalogue No. 11-526).

### *Public Awareness Campaigns*

Pharmacists are working with Environment Canada to reduce mercury levels in the environment by safely collecting and disposing of unbroken mercury fever thermometers as part of a Mercury Fever Thermometer Take Back pilot project. London, Ottawa, and Thunder Bay residents were able to return unbroken mercury fever thermometers to participating retailers from February 15 to March 15, 2002. Over 100 pharmacies participated in the program, and 1400 thermometers were collected in total. The pilot project provided individuals with a safe disposal method for mercury fever thermometers and eliminated the risk of releasing mercury into the environment. The lessons learned will help determine the feasibility of initiating a national program.



London, Ottawa, and Thunder Bay residents were able to return unbroken thermometers from February 15 to March 15, 2002 as part of a Mercury Fever Thermometer Take Back pilot project.

Environment Canada is providing financial support and technical advice to the Riversafe Car Wash Campaign. The campaign's purpose is to educate residents and community groups about the impact of unregulated non-point discharges from home and volunteer fundraising events at carwashes/gas stations. In addition, Environment Canada is financially supporting the formation of a multi-stakeholder task force to examine the establishment of a carwash industry self-certification initiative. For more information, visit http://www.riverside.org

The Environmental Damages Fund (EDF), administered by Environment Canada, is a repository for fines levied against those convicted of causing environmental damage. Through a partnership with the Atlantic EDF managers, a higher priority is placed on EDF fund proposals for projects that use pollution prevention approaches and practices where appropriate.

3 Pesticides: Making the Right Choice for the Protection of Health and the Environment. Report of the Standing Committee on Environment and Sustainable Development, May 2000.
4 Symposium on Sustainable Consumption, Oslo, Norway, January 1994.

Atlantic Canada Opportunities Agency funded a series of short television vignettes profiling young entrepreneurs. The profiles introduce young people to the world of business by providing role models and offer practical steps to help them establish a viable business. One aspect they address is the issue of sustainable development and pollution prevention when running a business. The profiles aired on the CBC TV series "Street Cents" and on French CBC television.

As part of its Community Animation Project (CAP) Program, Health Canada's Ontario Region is working with the Nunavut government and non-governmental organizations to strengthen local health/environment networks, committees, groups, and projects. Networking links were increased between 65 health/environment groups and sectors. Results include support for healthy public policy on pesticide reduction workshops and education campaigns; and fundraising and intersectoral collaboration in support of well water protection workshops.

### *Access to Information*

TerraChoice Environmental Services Inc., on behalf of Environment Canada, manages and delivers the Environmental Choice™ Program (ECP). The ECP is an eco-labelling program that helps individuals, corporations, and governments make informed purchasing decisions to reduce their environmental impacts. Over 3000 brand name products in approximately 136 product categories now bear ECP's EcoLogo, including products such as tires, cleaners, office equipment, electricity, and paints. For more information, visit http://www.environmentalchoice.com.

Natural Resources Canada's Auto$mart information program promotes awareness among Canadian motorists of how important vehicle fuel efficiency, maintenance, and proper driving are in reducing emissions and benefiting the environment, as well as saving money. This year, the program provided information to 30 124 more new drivers through its Auto$mart driver kits and other information sources.

The fifth annual Canadian Pollution Prevention Roundtable was held in St. John's, Newfoundland, in June 2001. The Roundtable is a recognized opportunity to strengthen partnerships and advance pollution prevention. Sessions included Corporate Sustainability, Health and Community Healthcare, Measuring and Reporting P2 Progress, North American Sustainable Consumption Network, Integrating P2 into Existing Management Systems, and the launch of a municipal pollution prevention workgroup. Over 100 participants representing business, consultants, universities, governments, labour, youth, and non-governmental organizations discussed pollution prevention issues and celebrated Canadian achievements. With funding support from Environment Canada, the Canadian Centre for Pollution Prevention, a non-profit organization, coordinates the Roundtable. For more information, visit http://www.c2p2online.com (click on Conferences & Training).

The Canadian Pollution Prevention Information Clearinghouse is an Internet tool that links Canadians to information on pollution prevention (P2). It explains P2, explores the benefits, and provides examples of common practices. This online database provides access to over 1300 P2 reference materials. The references cover more than 30 industrial sectors and service industries and contain information on community projects and how to incorporate P2 into daily life. The Canadian Pollution Prevention Success Stories website is a place to see examples of P2 in action. Providing incentive for Canadians to adopt similar practices, the success stories website currently recognizes 85 Canadian organizations, companies, and individuals who are making a difference in P2. Environment Canada is responsible for the upkeep and maintenance of these two sites, as well as the inclusion of additional information.

### *CANADIAN ENVIRONMENTAL PROTECTION ACT* (CEPA) ENVIRONMENTAL REGISTRY

The CEPA Environmental Registry is a comprehensive source of public information relating to activities under the *Canadian Environmental Protection Act, 1999* (CEPA 1999). In addition to providing up-to-date copies of current CEPA instruments, the primary objective of the Environmental Registry is to encourage and support public participation in environmental decision-making, by facilitating access to documents arising from the administration of the Act. To access the Registry, visit http://www.ec.gc.ca/ceparegistry/

In 2001, the Government of Canada introduced the Energy Star™ symbol as a way consumers could quickly identify the most energy efficient products in their class. The Energy Star symbol is backed up by technical specifications that identifies how a product qualifies for the energy efficiency mark and what efficiency level must be attained. The Energy Star™ high-efficiency specifications are administered by Natural Resources Canada's Equipment Program. NRCan endorses specifications for selected major electrical household appliances, heating and cooling products, office equipment, consumer electronics, some lighting and signage products, as well as selected commercial and industrial products. NRCan's Equipment Program also administers the Regulations under Canada's Energy Efficiency Act. The Regulations, originally introduced in 1995, identify minimum energy performance levels and test standards for over 32 energy-using consumer products in all market sectors. They are continually being updated to take into account changes in technology and in standards. For example, an amendment to the Regulations was passed in 2001 to introduce new energy efficiency levels and updated test standards for refrigerators, refrigerator freezers, and freezers. Subsequent amendments to the Regulations include upgrading the standard for room air conditioners, lighting ballasts, distribution transformers, and other residential and commercial space conditioning equipment. For more information on Energy Star, visit the web site at: http://energystar.gc.ca. For more information on Canada's Energy Efficiency Regulations, visit http://oee.nrcan.gc.ca/regulations

The Youth Round Table on the Environment is an active, nonpartisan forum that brings together young Canadians of diverse regional, cultural, educational, and linguistic backgrounds to provide input on Environment Canada's programs and policies.

The EnerGuide for Houses Program encourages Canadians to improve the energy efficiency of their homes. Of the homeowners receiving the evaluation, 63% respond with some amount of work, including caulking/draft sealing, 49%; insulation, 42%; door and window replacement, 37%; and heating system replacement, 19%. By year-end 2001, average energy consumption of homes that undertook retrofits had improved by 17.6%. Greenhouse gas reduction since the program began is estimated at 30.8 kilotonnes. Natural Resources Canada provides national coordination, technical support, software tools, and training for the program.

### *Addressing Climate Change*

The Government of Canada Action Plan 2000 on Climate Change is a five-year program that will reduce greenhouse gas emissions by 65 megatonnes per year in key sectors of the economy. In November 2001, the Government of Canada announced details of 28 specific climate change initiatives to cut Canada's greenhouse gas emissions by more than 23.7 megatonnes by 2010. These practical, concrete measures, when fully implemented, are expected to take Canada about one-third of the way (or 65 megatonnes closer) to the targets agreed to during the 1997 Kyoto Protocol negotiations. For more information, visit http://www.climatechange.gc.ca.

### *Engaging Youth*

Started in 1997, the Youth Round Table on the Environment (YRTE) is an active, non-partisan forum of up to 18 youths that brings together young Canadians of diverse regional, cultural, educational, and linguistic backgrounds. During a one-year term, the group meets up to three times a year to provide input on Environment Canada's programs and policies and to advise on ways to make these programs more accessible to youth. In 2001–2002, the YRTE addressed themes including Environment and Health, the World Summit on Sustainable Development, Technology and the Environment, Conservation and Stewardship, Climate Change and Kyoto, and Water and Environmental Education. For more information, visit http://www.ec.gc.ca/youth/index_e.html.

Environment Canada—Atlantic Region provided financial and technical support to the four Atlantic provincial organizing committees of the 2001 Canon Envirothon™. The Envirothon™ is North America's largest high school-level science fair. The 2001 event theme was non-point source pollution. Competing student teams received a one-hour briefing on topics such as non-point source pollution and pollution prevention alternatives.

Every four years, Scouts Canada organizes a 10-day Jamboree providing 12 000 youth aged 11 to 17, and staff from across Canada and beyond, with the experience of outdoor activities. The 2001 Canada Jamboree (CJ'01) was held at Cabot Provincial Park, Prince Edward Island. Environment Canada provided a range of environmental elements to the CJ'01 program. Pollution prevention principles and practices, such as Leave No Trace, were taught and used throughout the Jamboree, from site water treatment to beach hiking. Scouts learned, from role playing, the consequences of groundwater contamination and the means to prevent it.

Atlantic Canada Opportunities Agency funded a study of entrepreneurship among young Atlantic Canadians aged 15 to 29. The study sought opinions of young entrepreneurs and non-entrepreneurs throughout Atlantic Canada on a wide variety of business-related issues and included questions on the environment and sustainable development. Ninety-three per cent of entrepreneurs believe it is possible to operate a business without harming the environment.

The Computers for Schools program collects, repairs, and refurbishes donated surplus computers from government and private sector sources and distributes them free to schools. The program, managed by Industry Canada, has a total of 69 centres throughout Canada, where computers are cleaned, refurbished, and prepared for delivery, or recycled if unusable. In 2001–2002, over 73 000 refurbished computers were made available for reuse, with 360 000 reused since 1993. In addition, the program has diverted, through recycling, over 22 million kilograms of used equipment not suitable for donation through recycling. For more information, visit http://www.schoolnet.ca/cfs-ope.

**POLLUTION PREVENTION OPPORTUNITY FACT SHEETS**

Environment Canada created a series of fact sheets entitled *P2 & You* for households. The fact sheets feature useful tips on how to implement pollution prevention around the home, at work, at school, while driving, and while shopping. Below is a sample checklist of what households can do that will save energy and water and reduce the amount of waste created, while at the same time saving money.

**Save energy**

- ☐ Turn the temperature on your water heater down. Most homes do not need extremely hot water.
- ☐ Use the energy saver option or shortest cycle necessary on appliances.

**Reduce waste**

- ☐ Create and maintain your own compost pile, if feasible. This will produce your own fertilizer and reduce the amount of garbage from your home.
- ☐ Cardboard boxes and paper bags can be used to store things or when packing items for your next move.
- ☐ Plastic shopping bags can be reused on your next visit to the grocery store.

**Save water**

- ☐ Place a plastic bottle filled with water in your toilet tank to reduce water use in the toilet.
- ☐ Install water flow-reducing attachments for faucets and showerheads to reduce water use.

**Be consumer wise**

- ☐ Purchase products and services from companies that are environmentally conscious.
- ☐ Use safer alternatives to hazardous chemicals. For example, use insecticidal soaps instead of chemical sprays to get rid of insects on your plants at home.

For the complete set of fact sheets, visit http://www.ec.gc.ca/nopp/docs/fact/en/index.cfm

**TRACKING PROGRESS AGAINST *POLLUTION PREVENTION—A FEDERAL STRATEGY FOR ACTION*[1]**

**Goal:** Provide access to the information and tools necessary to implement pollution prevention practices

| Actions: | Status: | Examples: |
|---|---|---|
| 1. Provide information that illustrates how pollution prevention fits into daily activities. | Ongoing | • Canadian Pollution Prevention Success Stories<br>• EcoAction program<br>• Canadian Centre for Pollution Prevention |
| 2. Create a national pollution prevention clearing house. | Complete | • Canadian Pollution Prevention Information Clearinghouse |
| 3. Encourage consumers to use their purchasing power to promote pollution prevention. | Ongoing | • Auto$mart Program<br>• Environmental Choice Program<br>• Energy Star program |

1 This table summarizes the linkages to programs and initiatives undertaken in pollution prevention with the federal government's action plan on pollution prevention with the Canadian public.

# Progress with the International Community

## Federal pollution prevention strategy goal: Participate in international pollution prevention initiatives.

***International Agreements and Technology Transfer***

Canada was the first country in the world to sign and ratify the Stockholm Convention on Persistent Organic Pollutants (POPs), which aims to ban or restrict the use of certain hazardous chemicals around the world. Even though Canada has banned or restricted their use, most POPs of concern are transported from foreign sources through the atmosphere into Canada, where they accumulate in the food chain. Because of atmospheric circulation, POPs travel great distances from their sources, posing significant risks to the health of Canadians. These risks are of particular concern to northern Aboriginal populations dependent on traditional foods. The Canadian International Development Agency provided $20 million to the Canada POPs Fund, to help developing countries and countries with economies in transition to reduce or eliminate the release of POPs, including certain pesticides (e.g., DDT) and industrial chemicals (e.g., PCBs), and to ratify and implement the Convention. Now entering its second year, the Fund has a number of successful projects under way and will continue to provide support until 2005.

Technology Early Action Measures provide financial support for international demonstrations of climate change technologies.

The Canadian International Development Agency (CIDA) manages the $100 million Climate Change Development Fund on behalf of the Government of Canada. Through this fund, CIDA promotes, facilitates, and/or finances the transfer of environmentally sound technologies that address the causes and effects of climate change in developing countries, while at the same time contributing to sustainable development and poverty reduction. The four programming areas are emission reductions, carbon sequestration, adaptation to adverse impacts of climate change, and core capacity-building. These initiatives aim at building capacity in developing countries and can cover know-how, equipment, and products. All projects have been selected and are entering the implementation phase. Current projects include providing solar energy to rural populations in China and providing technical assistance to the brick-making factories in Egypt to reduce greenhouse gases and other air pollutant emissions.

As part of the Climate Change Action Fund, Technology Early Action Measures (TEAM) provides financial support for international demonstrations of climate change technologies. TEAM investments accelerate the demonstration and deployment of new greenhouse gas reduction technologies to other countries, particularly developing nations. The Climate Change Office of Industry Canada contributed salary dollars to TEAM administration and participated in the interdepartmental review of prospective projects.

To establish the best available practices in life cycle assessment (LCA), the United Nations Environment Programme and the Society of Environmental Toxicology and Chemistry hosted an international workshop on LCA. This workshop was also sponsored by Natural Resources Canada, Asia-Pacific Economic Cooperation, and the International Council of Metals. LCA can be used to identify

opportunities for pollution prevention by comparing the potential environmental impact of the current situation with an alternative. Various models used to calculate the potential impacts of metal production and emissions were discussed in order to identify gaps and suggest improvements. Natural Resources Canada provided scientific direction and organizational logistics support on this project.

Through partnerships with the Canadian International Development Agency (CIDA), Natural Resources Canada (NRCan) promotes environmental stewardship in minerals and metals mining abroad. During 2001–2002, NRCan managed contracts on behalf of CIDA in Guyana, Zambia, and Brazil. The objective of these projects is to transfer Canadian technical expertise in environmental management related to mining in order to improve the capability of these countries' governments to manage their mining interests, thereby reducing the risks to human health or the environment. To date, the project has been very successful in developing excellent working relationships with the Zambian stakeholders. In Guyana, new technologies for maximizing mineral recovery in an environmentally responsible manner will be introduced through training and demonstration projects targeting primarily small and medium-sized mining ventures. In Brazil, the government and industry have started applying newly transferred expertise to rehabilitate mine sites across the country.

Health Canada's Office of Sustainable Development has actively participated in international discussions involving the development of a Globally Harmonised System for Chemical Hazard Classification (GHS). The goal of the GHS is to provide a common international approach to defining and classifying chemicals, warning users of the dangers, which in turn makes the users more cautious about exposing themselves and discharging the chemicals of concern to the environment. It is expected that the system will be widely applied, and significant benefits to human health and the environment will result.

The Pollution Prevention World Information Network is an online network designed to bring together pollution prevention roundtables and cleaner production networks to strengthen partnerships, encourage innovation, and take collective action. Designed to be a vital new resource for businesses and governments, the Internet-based network connects and serves as a virtual meeting place for pollution prevention roundtables, cleaner production networks, and other organizations committed to advancing pollution prevention and sustainability. It is an evolving network—a partnership between governments, the private sector, non-governmental organizations, and academics that links and supports the pollution prevention community while reaching out to new partners such as organizations dealing with energy efficiency, finance, and sustainable consumption. The initiative commits roundtables in the Americas, Asia-Pacific, Africa, Eastern and Central Europe, and China to creating a permanent network that encourages ideas and innovation—a true Roundtable of Roundtables. For more information, visit http://www.p2win.org.

### *North, Central, and South America*

The development of a North American Pollution Prevention Partnership (NAP3) under the auspices of the North American Commission for Environmental Cooperation has resulted in a formal North American Pollution Prevention Declaration, which was signed by the Canadian, American, and Mexican roundtables at the Canadian Pollution Prevention Roundtable in Quebec in April 2002. The partnership will continue to look for additional ways to align environmental policies, projects, and programs to advance pollution prevention and achieve better environmental results over the next three years. As part of NAP3, Environment Canada provided financial assistance to the Canadian Centre for Pollution Prevention (C2P2) to develop the Canadian contribution to the joint policy document and enabled Canadian participation in the NAP3 steering committee. Environment Canada's National Office of Pollution Prevention and C2P2 have partnered on many occasions to advance

At the Canadian Pollution Prevention Roundtable in Quebec 2002 a formal North American Pollution Prevention Declaration was signed by the Canadian, American and Mexican roundtables.

pollution prevention internationally. Projects such as the International Pollution Prevention Summit, exhibiting at the ninth meeting of the United Nations Commission on Sustainable Development, and presentations at the National Pollution Prevention Roundtable in the United States have helped forge Canada's leadership role in advancing pollution prevention in the international community.

In January 2002, Canada was the Chair of the G-8 Summit in Kananaskis, Alberta. Based on experience gained and documented at the 1995 Halifax G-7 Summit by Environment Canada, six stewardship principles were adopted and integrated into the environmental management plans for the Kananaskis Summit. For more information, visit: http://www.g8.gc.ca/kananaskis/envirosea-en.asp

### *Asia and Africa*

The Canadian International Development Agency, in partnership with Resource Efficient Agriculture Production, an independent research and development organization, initiated the Southern Negros Sustainable Agriculture Demonstration Project in the main sugar-growing region of the Philippines. The project aims to actively rehabilitate the natural resource base of the region through the adoption of ecological farming practices. Through informal information-sharing and farmer-to-farmer training, farmers are encouraged to explore natural pest control methods to replace widely used synthetic pesticides. So far, 60% of farmers in five communities have used these methods, resulting in improved water and soil quality. Other

benefits of the program include reductions in greenhouse gas emissions through minimized crop residue burning and decreased use of fossil-based energy inputs. For more information, visit http://www.ec.gc.ca/p2progress/2000-2001/en/sec2_5_3.cfm (case sensitive).

China has, with the support of the Canadian International Development Agency and Environment Canada's National Office of Pollution Prevention, translated into Mandarin and distributed throughout China several key Canadian documents on pollution prevention and pollution prevention planning. This project will ensure widespread sharing of Canadian pollution prevention approaches and practices within China, which should result in environmental gains for the global common.

Jiangsu Small and Medium-Sized Enterprises (SME) Applied Management and Environmental Project provides assistance in management and in environmental and business planning capacity to SMEs. This project also aims to enhance enterprises' awareness of the need for waste minimization, cleaner production, and more environmentally sound technology alternatives, through the use of demonstration/pilot projects and the training of local trainers. The Jiangsu provincial government and the Canadian International Development Agency sponsored this project through a $5 million environment revolving fund. The project also supports sectoral linkages and information exchange between Canadian and Jiangsu industries (initially chemical and metal working).

From 2001 to 2006, the Canadian International Development Agency, in partnership with the International Development Research Centre, is conducting an Economy and Environment Program for Southeast Asia. The project aims to enhance the capacity of Southeast Asian researchers to carry out economic analysis of environmental problems and policies and inform policymakers and civil society. It also aims to devise effective measures for the reduction of pollution and resource depletion. The expected results include an increase in the capacity of national institutions and regional research networks, the improved design and implementation of policies affecting the environment, an increase in the capacity of researchers in Southeast Asia to understand and apply environmental economics, enhanced communication between researchers and policymakers, as well as an increase in regional collaboration and knowledge sharing.

Key Canadian documents on pollution prevention and pollution prevention planning have been translated into Mandarin and distributed throughout China to ensure widespread sharing of Canadian approaches and practices.

The Canadian International Development Agency has been supporting for the last seven years a project that contributes to India's capacity to promote environmentally sustainable industrial development. The project has provided the Confederation of Indian Industry (CII), Indian government officials, and representatives from industry with the basic technical knowledge required to begin addressing a series of environmental issues. Moreover, it has served as a mechanism to engage industry and government in dialogue in these areas. The next five years of the project will be focused on further strengthening the capacity of CII to provide guidance to Indian industry on targeted environmental and social issues, increasing the capacity of industry to incorporate environmental and social issues in doing business, and contributing to policy development relative to the environmental performance of Indian industry.

**CLEANER PRODUCTION**

The China–Canada Cooperation Project in Cleaner Production was established by the Canadian International Development Agency in 1996. Cleaner production is defined as "the continuous application of a pollution prevention strategy to processes and products through continuous improvement of management practices and technologies in order to enhance efficiency of resource utilization, to eliminate pollution emissions and to reduce risks to human health and the environment." The distinction between Cleaner Production and Pollution Prevention tends to be geographic—the term pollution prevention tends to be used in North America, while the term cleaner production is used in other parts of the world. For more information on the China–Canada Cooperation Project, visit http://www.chinacp.com.

### SHARING INFORMATION ON INDUSTRIAL CHEMICALS

In an effort to streamline the new substances notification and assessment schemes in Canada and the United States, Environment Canada has partnered with the U.S. Environmental Protection Agency and industry in both countries through the Four Corners Agreement, which was first piloted in 1996. This agreement involves the exchange of technical data and assessment information. During 2001–2002, 12 substances were submitted and reviewed under this program. The terms and conditions of the Four Corners Agreement will be examined in the near future to increase its benefits for all parties.

Canada chairs the Organisation for Economic Co-operation and Development's (OECD) Task Force of New Industrial Chemicals established in 1999–2000. Environment Canada and Health Canada, in association with the Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS), is part of a wider OECD effort aimed at learning from each other, enhancing information- and work-sharing, and harmonizing new chemical schemes. During 2001–2002, Canada and Australia continued their discussions on developing an arrangement between the two countries and started exchanging information to gain greater understanding of their respective New Chemicals programs.

Environment Canada, in cooperation with Health Canada, actively contributes as a member of the OECD Environmental Exposure Assessment Task Force (EEATF). Together, they are preparing two emission scenario documents (ESDs), to describe chemical uses and discharges at pulp and paper and textile mills. The ESDs will be included as part of the EEATF's effort to share available ESDs and other useful information and tools.

### PREPARATIONS FOR THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

The World Summit on Sustainable Development (WSSD), which took place in Johannesburg, South Africa, brought together people from around the world to focus global attention on actions to achieve sustainable development. To prepare the agenda for the Johannesburg Summit and build consensus for its outcome, a global Preparatory Committee held four meetings during 2001–2002. Many stakeholders participated in these preparatory meetings for Canada, including representatives from government, as well as civil society, indigenous peoples, youth, and business communities. Roundtable discussions across Canada produced an extraordinary consistency in identifying Canadian and international priorities for Johannesburg and the coming decade. Five key issues emerged as the highest priorities: poverty, consumption patterns in developed countries, clean water, renewable energies, and education/traditional knowledge.

Also, in preparing for the WSSD, the report "Progress Towards a Sustainable Development Strategy for the Government of Canada" was produced. This document provides an overview of federal government sustainable development initiatives, a synthesis of current departmental sustainable development strategies, and a vision and principles for moving forward. Coming out of Johannesburg, the intent is to prepare an overarching federal sustainable development strategy that will assist in implementing the outcomes of WSSD. For more information, visit http://www.wssd-smdd.gc.ca.

### TRACKING PROGRESS AGAINST *POLLUTION PREVENTION—A FEDERAL STRATEGY FOR ACTION*[1]

**Goal:** Participate in international pollution prevention initiatives

| Actions: | Status: | Examples: |
|---|---|---|
| 1. Stimulate a shift to pollution prevention in international organizations. | Ongoing | • G-8 Summit<br>• United Nations Environment Programme<br>• Pollution Prevention World Information Network |
| 2. Incorporate pollution prevention into international standards. | Ongoing | • Canada–China cooperative project to share pollution prevention planning information |
| 3. Advance pollution prevention through international protocols and agreements. | Ongoing | • Canada–U.S. Air Quality Agreement<br>• Kyoto Protocol<br>• North American Pollution Prevention Partnership<br>• Persistent Organic Pollutants agreement |

1 This table summarizes the linkages to programs and initiatives undertaken in pollution prevention with the federal government's action plan on pollution prevention with the international community.

# Trends and Future Opportunities

## Canada continues with its commitment to place pollution prevention in the mainstream of daily decision-making.

The 1992 Rio Earth Summit recognized the significance of pollution prevention to sustainable development. The Rio Declaration of Environment and Development says that "states should reduce and eliminate unsustainable patterns of production and consumption...."[5] It also mentions that "states should...discourage or prevent the relocation and transfer...of any activity and substance that cause severe environmental degradation or are found to be harmful to human health."[6] Ten years have passed since Rio, and the federal Pollution Prevention Strategy resides as the foundation for promoting the use of processes, practices, materials, products, substances, and energy that avoid or minimize the creation of pollutants and waste.

This report, *Progress in Pollution Prevention 2001–2002*, demonstrates the Government of Canada's commitment to "institutionalize pollution prevention across all federal government activities," as stated in *Pollution Prevention—A Federal Strategy for Action*.

Canada has a long history of ensuring the protection of the environment and human health. The *Canadian Environmental Protection Act, 1999* encompasses pollution prevention and authorizes the federal Minister of Environment to require pollution prevention planning with respect to various substances designated as "toxic."

Working partnerships between federal departments ensure a more collaborative approach to integrating pollution prevention into policies, programs, and tools. Collectively, the Pollution Prevention Coordinating Committee has succeeded in significantly enhancing awareness over the years. Pollution prevention is a continuing agenda item for many senior government officials. To advance this work and profile successes, all federal departments are encouraged to record their pollution prevention efforts during the year for inclusion in upcoming annual progress reports.

Having developed consensus and commitment to a coordinated approach, federal departments will continue to demonstrate leadership in developing and setting best practices as well as specific performance measures. A future focus will be on sharing more fully the lessons learned from this process among all federal departments. Strengthening environmental baseline data and developing practical means to report progress and measurable environmental results will be ongoing priorities.

Much work has gone into building the range of public–private challenge programs that address issues such as energy efficiency, smog, toxic emissions, and greenhouse gas emissions. Both public and private sectors have learned from these programs, and various federal departments are working together to improve or develop successor programs that will continue to encourage pollution prevention and significantly reduce the environmental impact of a wider range of business activities in Canada.

Local-level partnerships may be particularly effective ways of reaching small and medium-sized enterprises (SMEs). Many SMEs do not have the resources readily available for investment in pollution prevention projects and can be difficult to reach, mobilize, or engage in environmental activities. There is also a renewed focus to help municipalities identify opportunities and implement pollution prevention.

Work will move forward on the development of emission reduction strategies to meet Canada-wide standards for air quality. Some jurisdictions have also chosen to consult further with industry, municipal, environmental, health, and Aboriginal groups on the development and implementation of these standards for substances such as mercury, benzene, and dioxins and furans.

Internationally, one of the most important outcomes from the International Pollution

5 Report of the United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, June 1992. Annex I, Principle 8.

6 Report of the United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, June 1992. Annex I, Principle 14.

Prevention Summit in Montreal was the creation of the Pollution Prevention World Information Network. This network will provide a virtual meeting place for linking pollution prevention practitioners worldwide.

Access to information, tools, and funding will remain essential to encourage the abilities of individuals and communities to make better informed decisions that will protect the environment.

The pollution prevention successes achieved in 2001–2002 leave the Government of Canada well positioned to address environmental issues in an innovative and effective way—giving Canada a competitive edge in the industries of the future.

The Pollution Prevention Coordinating Committee encourages all Canadians to identify and pursue opportunities for pollution prevention. Federal departments can facilitate and coordinate partnerships with businesses, environmental groups, scientists, Aboriginal communities, other governments, and individual citizens. By continuing to work together towards the goal of preventing pollution at the source, Canadians will protect the environment and human health and secure a sustainable economy for generations to come.

*On the Internet, view this report at http://www.ec.gc.ca/p2progress.*

**WORKING TOWARDS RESULTS: *POLLUTION PREVENTION—A FEDERAL STRATEGY FOR ACTION***

| Target Sector | Strategy Goal | Trends and Future Opportunities |
|---|---|---|
| Federal government | Institutionalize pollution prevention across all federal government activities. | • **Trend:** Strengthened partnerships between federal departments and greater emphasis on integrating a pollution prevention approach within policies, programs, and tools.<br>• **Future Opportunity:** Further expand federal department participation in upcoming Progress in Pollution Prevention Reports and ensuring all projects are identified. |
| Other governments | Foster a national pollution prevention effort. | • **Trend:** Developing Canada-wide Standards.<br>• **Future Opportunity:** Assisting municipalities in the identification and implementation of pollution prevention approaches. |
| Private sector | Achieve a climate in which pollution prevention becomes a major consideration in private sector activities. | • **Trend:** Continued commitment to public–private pollutant reduction challenge programs.<br>• **Future Opportunity:** Improving the environmental performance of small and medium-sized enterprises, and more emphasis on product-focused policies. |
| Canadian public | Provide access to the information and tools necessary to implement pollution prevention practices. | • **Trend:** Increased provision of pollution prevention information and successes.<br>• **Future Opportunity:** Enhancing the consumer's ability to make sustainable consumption choices. |
| International community | Participate in international pollution prevention initiatives. | • **Trend:** Sharing information on pollution prevention activities.<br>• **Future Opportunity:** Building the capacity of developing countries to "leapfrog" to best practices. |

*To view* Pollution Prevention—A Federal Strategy for Action, *visit http://www.ec.gc.ca/pollution/strategy.*

# Appendix I:

## Pollution Prevention Coordinating Committee Membership List (2001–2002)

ENVIRONMENT CANADA
**National Office of Pollution Prevention**
John de Gonzague (Chairperson)
Lynne Robinson-Lewis (alternate Chairperson)
Kathi De (Coordinator)

**Environmental Technology Advancement Directorate**
Patricia Mitchell / Adrian Steenkamer

**Regions**
Rodger Albright – Atlantic Region
Thanh Thao Pham / Lucie Desforges – Quebec Region
Brad Cumming / Ron Nobes – Ontario Region
David Noseworthy / Cheryl Baraniecki – Prairie & Northern Region
Jeff Taylor – Pacific & Yukon Region

**Interdepartmental Network on Sustainable Development Strategies (INSDS)**
Craig Ferguson

**Federal Committee on Environmental Management Services**
Richard Arseneault

NATURAL RESOURCES CANADA
Richard Arseneault / Chris Callaghan

INDUSTRY CANADA
**Environmental Affairs Branch**
Adam Moser / Saeed Khan

NATIONAL DEFENCE
**Directorate Environmental Protection**
Holmer Berthiaume / Sean Baptiste

CANADIAN INTERNATIONAL DEVELOPMENT AGENCY
**Environmental Policies and Multilateral Environmental Agreements Division**
Roxanne Robert

FISHERIES AND OCEANS CANADA
**Corporate Services – Office of Environmental Coordination**
Francine Richard

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
**Environmental Services**
Sarah Byers / Shirley Shea

TRANSPORT CANADA
**Environmental Affairs AHEB**
Alec Simpson / Saleem Sattar / Jessica Smith

DEPARTMENT OF FOREIGN AFFAIRS AND INTERNATIONAL TRADE
**Environmental Services**
Jaye Shuttleworth / Kelly Thom

AGRICULTURE AND AGRI-FOOD CANADA
**Corporate Services Branch – Asset Management and Capital Planning Directorate – Engineering Services**
Pierre Laplante

HEALTH CANADA
**Environmental Management Systems Division**
John Horricks / Karen Prince

Members can be reached through the Government of Canada Employees Directory at http://direct.srv.gc.ca/cgi-bin/direct500/BE

# Appendix II:

## Federal Department and Agency Contributors to the 2001–2002 Progress in Pollution Prevention Report

Environment Canada
Agriculture and Agri-Food Canada
Atlantic Canada Opportunities Agency
Canadian Food Inspection Agency
Canadian International Development Agency
Communication Research Centre Canada *(first year reporting)*
Economic Development Canada
Fisheries and Oceans Canada
Foreign Affairs and International Trade
Health Canada
Human Resources Development Canada
Indian and Northern Affairs Canada
Industry Canada
Justice Canada
National Defence
Natural Resources Canada
Public Works and Government Services Canada
Statistics Canada
Transport Canada
Western Economic Diversification Canada

***On the Internet, view this report at http://www.ec.gc.ca/p2progress.***

# *Acknowledgements*

***Steering Committee leading report preparation***

Lynne Robinson-Lewis, Chair, Environment Canada

Michelle Gatt, Environment Canada

Pierre Laplante, Agriculture and Agri-Food Canada

Debbie Wallace, Environment Canada

Karen Prince, Health Canada

Sean Baptiste, National Defence

This report was prepared by the Canadian Centre for Pollution Prevention Inc. based on project submissions and recommendations from various departments of the Government of Canada.

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For more information about the **Environmental Choice$^{M}$ Program**, please visit the ECP website at **www.environmentalchoice.com** or telephone (613) 247-1900.

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